California Regional Water Quality Control Board
Central Coast Region

Total Maximum Daily Loads for Chlorpyrifos and Diazinon in Lower Salinas River Watershed in Monterey County, California

Preliminary Draft TMDL Project Report
March 2010

NOTES TO READER:

1. The following is a preliminary draft document containing general information for public review. This document is not intended to provide content for formal public comment, therefore staff will not respond to comments received at this time. This document will be revised and subsequent versions will be available for formal public comment prior to a Central Coast Water Board hearing.
2. This TMDL and associated Basin Plan Amendments will not be heard by the Water Board in May 2010. Instead, Water Board staff will schedule this TMDL and associated Basin Plan Amendments following the Public Workshop for the Conditional Waiver of Waste Discharge Requirements for Discharges from Irrigated Lands being held in May 2010.
3. Water Board staff conducted a Public Workshop for this TMDL in January 2010. Participants at the Public Workshop requested that this preliminary draft document be available for public review and Water Board staff concurred.
4. For additional information pertaining to this project, or to be added to the interested parties list (IPL) for future notifications, please contact Larry Harlan at 805-594-6195 or lharlan@waterboards.ca.gov.

Adopted by the
California Regional Water Quality Control Board
Central Coast Region
on _______________, 2009

Approved by the
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Office of Administrative Law
on _______________,2009
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To request copies of the Draft TMDL Project Report for Total Maximum Daily Loads for Chlorpyrifos and Diazinon in Lower Salinas River Watershed Waters Including, Moss Landing Harbor (South), Old Salinas River Estuary, Salinas River Lagoon (North), Tembladero Slough, Espinosa Slough, Espinosa Lake, Salinas Reclamation Canal, Blanco Drain, Salinas River (Lower), Quail Creek, and Chualar Creek, in Monterey County, California, please contact Larry Harlan at (805) 594-6195, or by email at lharlan@waterboards.ca.gov. Documents also are available at:
http://www.waterboards.ca.gov/centralcoast/TMDL/303dandTMDLprojects.htm

STATE OF CALIFORNIA

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LIST OF ACRONYMS AND ABBREVIATIONS

CDPR	California Department of Pesticide Regulation
CDFG	California Department of Fish and Game
GC/MS	Gas Chromatography/Mass Spectrometry
CCAMP	Central Coast Ambient Monitoring Program
CCC	Criterion Continuous Concentration
CCoWS	Central Coast Watershed Studies at California State University, Monterey Bay
CMC	Criterion Maximum Concentration
ELISA	Enzyme-linked immunosorbant assays
GIS	Geographic Information System
MS4s	Municipal Separate Storm Sewer Systems
NPDES	National Pollutant Discharge Elimination System
OP	Organophosphate
PUR	Pesticide Use Report
TIEs	Toxicity Identification Evaluations
TMDL	Total Maximum Daily Load
USGS	United States Geologic Survey
Water Board	Regional Water Quality Control Board, Central Coast Region
WDR	Waste Discharge Requirements

1 PROJECT DEFINITION

1.1 Introduction

The Total Maximum Daily Load (TMDL) project area is located in the Lower Salinas River Watershed, Monterey County, California, as depicted in Figure 1-1.

Figure 1-1. Location of TMDL Project Area

For the purposes of the TMDLs addressed in the project area, the Lower Salinas River Watershed consists of the Salinas River valley floor north of Gonzalez (CalWater 2.2 Hydrologic Area 309.10, Lower Salinas Valley) out to the dunes along the Monterey Bay. The project area includes watersheds draining to waters of Moss Landing Harbor (South), Old Salinas River Estuary, Salinas River Lagoon (North), Tembladero Slough, Espinosa Slough, Espinosa Lake, Salinas Reclamation Canal, Blanco Drain, Salinas River (Lower), Natividad Creek, Quail Creek, and Chualar Creek. Figure 1-2 shows the waterbodies within the project area.

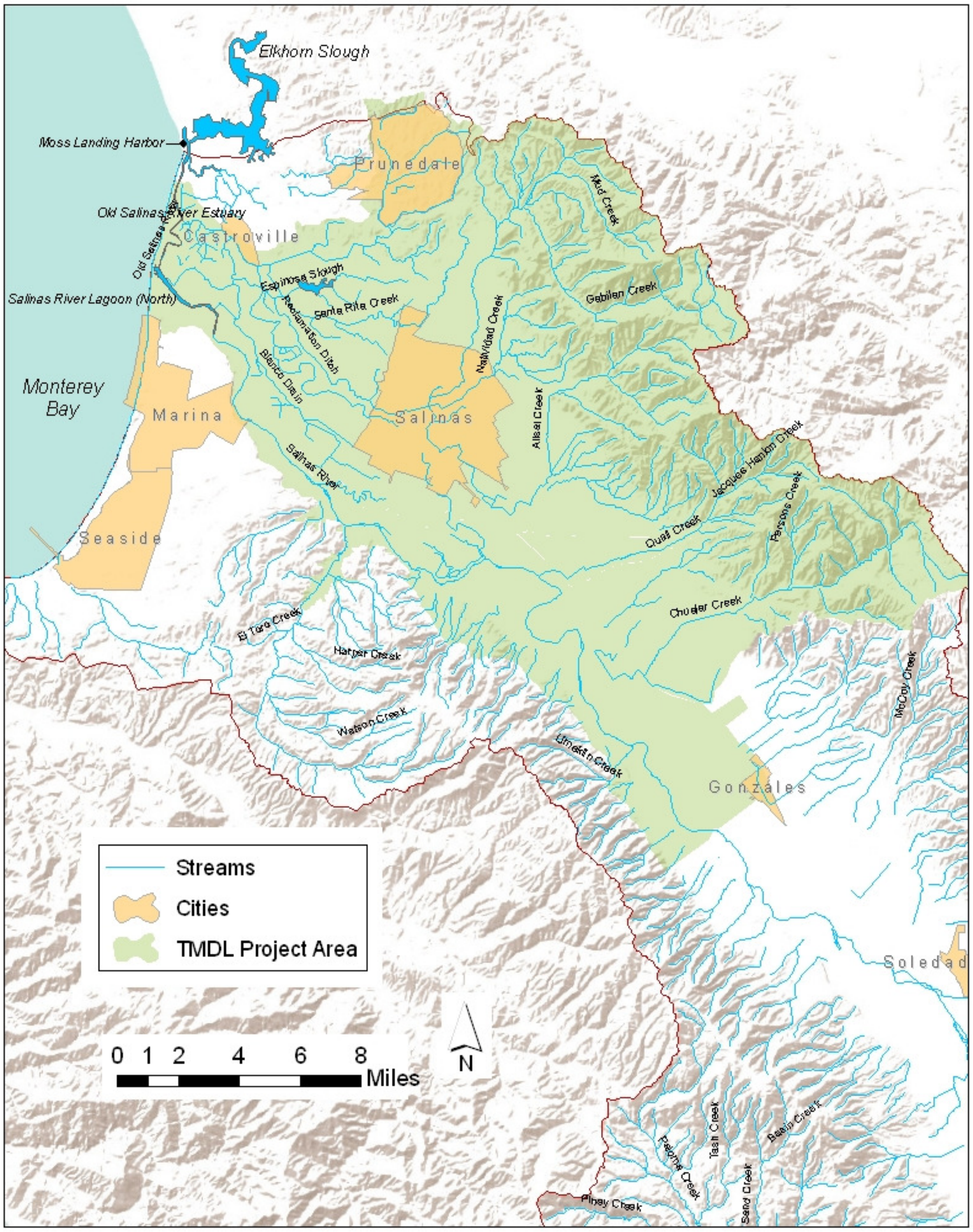


Figure 1-2. Waterbodies within the TMDL Project Area

This TMDL project addresses two currently registered organophosphate (OP) pesticides: chlorpyrifos and diazinon. Waterbodies listed for impairment due to chlorpyrifos and/or diazinon include Moss Landing Harbor (South), Tembladero Slough, Blanco Drain, Salinas Reclamation Canal Lower and Upper[1], Salinas River (Lower), Espinosa Slough, Espinosa Lake, Quail Creek, and Chualar Creek. Though not listed due to chlorpyrifos and/or diazinon impairment, additional waterbodies were assessed as part of this TMDL.

Waterbodies assessed in this TMDL, their current 303(d) status and determination of impairment (see Section 3.2, Impairment Assessment) are listed in Table 1-1. The general location of the waterbodies is shown in Figure 1-3 (next page).

Table 1-1. Waterbody/Pollutant Combinations Requiring TMDLs

TMDL Waterbodies Assessed	Current 303(d) List		TMDL Required [a]	
	Chlorpyrifos	Diazinon	Chlorpyrifos	Diazinon
Moro Cojo Slough				
Moss Landing Harbor, South [b]	X	X	X	X
Old Salinas River Estuary			X	X
Salinas River Lagoon (North)			X	
Tembladero Slough	X	X	X	X
Merritt Ditch				
Alisal Slough				X
Blanco Drain	X	X	X	X
Salinas Reclamation Canal, Lower [c]	X	X	X	X
Salinas Reclamation Canal, Upper/ Alisal Creek [c]	X	X	X	X
Salinas River [d]	X	X	X	X
Espinosa Slough		X		X
Espinosa Lake	X	X	X	X
Natividad Creek				X
Quail Creek	X	X	X	X
Chualar Creek	X	X	X	X
Total waterbody/pollutant combinations			11	13

[a] Currently listed on 303d list as impaired and/or impairment determined as part of TMDL impairment assessment (see Section 3.2), therefore addressed in this TMDL.
[b] Moss Landing Harbor south of Sandholt Bridge.
[c] See footnote.
[d] Salinas River (lower, from estuary to Gonzales Road crossing, CalWater watersheds 30910 and 30920).

The waterbodies enumerated in Table 1-1 and depicted in Figure 1-3 are listed for non-attainment of established water quality standards pertaining to toxicity and pesticides. Section 303(d) of the Clean Water Act requires the State to establish Total Maximum Daily Loads (TMDLs) at levels sufficient to attain water quality standards for toxicity and

[1] The terms Salinas Reclamation Canal and Salinas Reclamation Ditch are used interchangeably in this document and refer to the segment from the confluence of Alisal Creek (upper) to the confluence of Tembladero Slough (lower).

pesticides. The Water Board must also incorporate into the TMDL seasonal variations and a margin of safety that takes into account any lack of knowledge concerning the relationship between load limits and water quality.

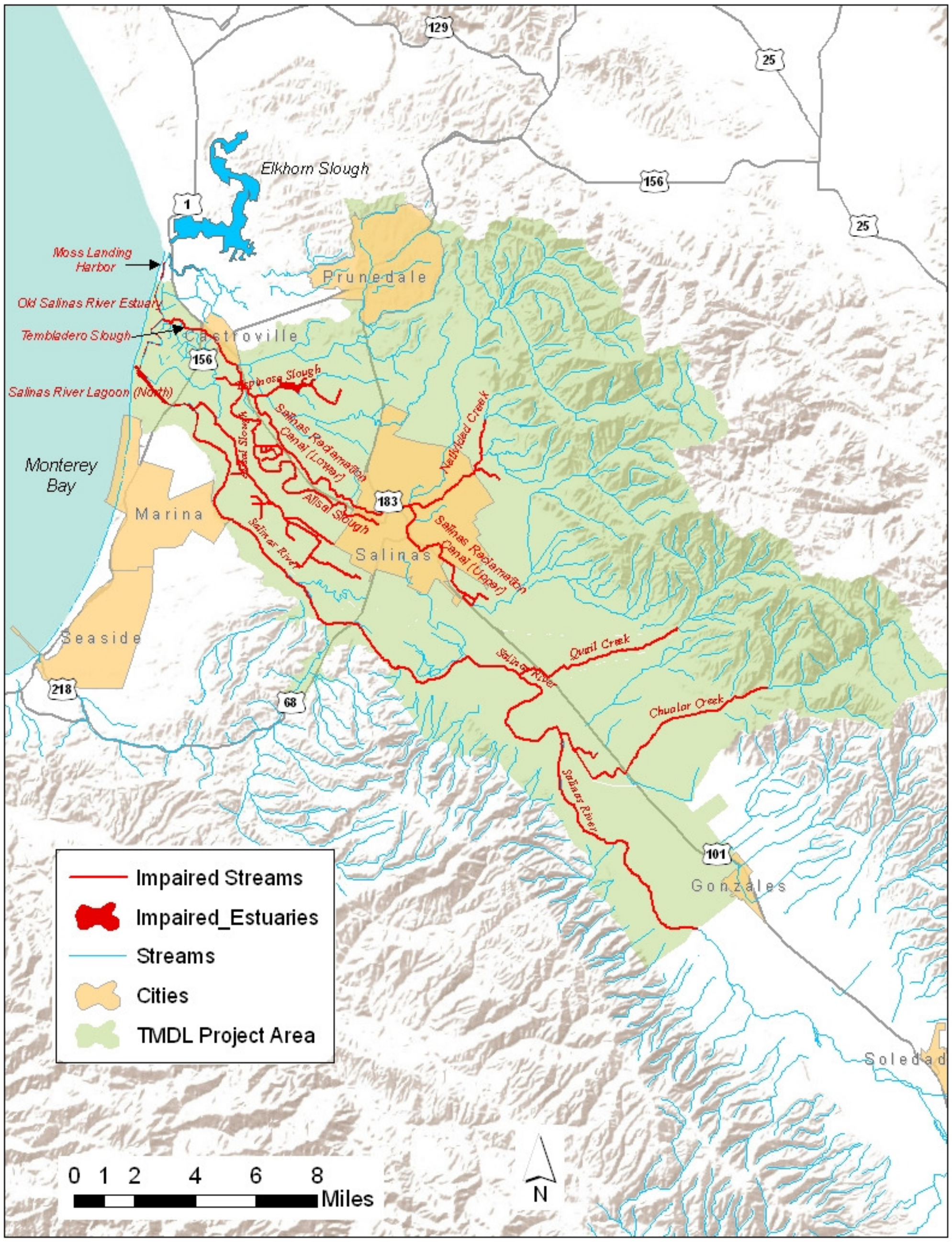


Figure 1-3. Impaired waterbodies within the TMDL Project Area.

Many of the listed waterbodies have been hydrologically modified within the last 90 years. For example, much of the Lower Salinas River watershed was drained in 1910's for the production of row crops and pumping occurs in certain areas to depress groundwater levels for crop production.

Moss Landing Harbor was created in the late 1940's and required access to be established through a new channel that cut through the dunes at Elkhorn Slough. This channel allows year round tidal influence to an area that was, prior to the construction of the harbor, typically cut-off from the Monterey Bay for at least part of the year.

1.2 Listing Basis

Waterbodies were listed for chlorpyrifos and/or diazinon in accordance with the State Water Resources Control Board Water Quality Control Policy for Developing California's Clean Water Act Section 303(d) List, September 2004 (Listing Policy. SWRCB, 2004). Table 3.1 of the Listing Policy specifies the minimum number of measured exceedances needed to place a water segment on the Section 303(d) list for toxicants (SWRCB, 2004, pg. 9). Using the binomial distribution, waters shall be placed on the section 303(d) list if the number of measured exceedances supports rejection of the null hypothesis as presented in Table 3.1 of the Listing Policy. Staff used evaluation guidelines of 0.025 micrograms per liter (µg/L) for chlorpyrifos and 0.160 µg/L for diazinon (Sipmann and Finlayson, 2000) to protect aquatic life beneficial uses for the development of the 2008 303(d) List. Note that a minimum of two samples is required to assess waterbody impairment. At the time of this document preparation, the 2008 303(d) list was under State Board consideration. Additional information pertaining to evaluation guidelines are contained in Section 5, *Numeric Targets*.

1.3 Water Quality Objectives

The Central Coast Region's Water Quality Control Plan (Basin Plan) contains specific water quality objectives that apply to all inland surface waters, enclosed bays and estuaries and include values, wholly, or in part, for pesticides (CCRWQCB, 1994, pg. III-3). Relevant water quality objectives for this project include:

1.3.1 Toxicity

All waters shall be maintained free of toxic substances in concentrations which are toxic to, or which produce detrimental physiological responses in, human, plant, animal, or aquatic life. Compliance with this objective will be determined by use of indicator organisms, analyses of species diversity, population density, growth anomalies, toxicity bioassays of appropriate duration, or other appropriate methods as specified by the Regional Board.

Survival of aquatic life in surface waters subjected to a waste discharge or other controllable water quality conditions, shall not be less than that for the same water body in areas unaffected by the waste discharge or, when necessary, for other control water that is consistent with the requirements for "experimental water" as described in Standard Methods for the Examination of Water and Wastewater, latest edition. As a minimum, compliance with this objective shall be evaluated with a 96-hour bioassay.

In addition, effluent limits based upon acute bioassays of effluents will be prescribed where appropriate, additional numerical receiving water objectives for specific toxicants will be established as sufficient data become available, and source control of toxic substances is encouraged.

1.3.2 Pesticides

No individual pesticide or combination of pesticides shall reach concentrations that adversely affect beneficial uses. There shall be no increase in pesticide concentrations found in bottom sediments or aquatic life.

1.4 Beneficial Uses

The designated beneficial uses identified in the Basin Plan for the listed waterbodies, are shown in Table 1-2 and Table 1-3. There are two separate Beneficial Use tables because the Basin Plan has one table for inland surface waters and one for coastal waters. Explanations of the beneficial use designations follow the tables.

Table 1-2. Basin-Plan designated Beneficial Uses for Inland Waters

Waterbody Names	MUN	AGR	PROC	IND	GWR	REC1	REC2	WILD	COLD	WARM	MIGR	SPWN	BIOL	RARE	EST	FRESH	COMM	SHELL
Old Salinas River Estuary						X	X	X	X	X	X	X	X	X	X		X	X
Tembladero Slough						X	X	X		X		X		X	X		X	X
Espinosa Lake						X	X	X		X							X	
Espinosa Slough						X	X	X		X							X	
Salinas Reclamation Canal						X	X	X		X							X	
Alisal Creek	X	X			X	X	X	X	X	X		X					X	
Blanco Drain						X	X	X		X							X	
Salinas River Lagoon (North)						X	X	X	X	X	X	X	X	X	X		X	X
Salinas River, dnstr of Spreckels Gage	X	X					X	X	X	X	X					X	X	
Salinas River, Spreckels Gage-Chualar	X	X	X	X	X	X	X	X	X	X	X						X	
Salinas Riv, Chualar-Nacimiento Riv	X	X	X	X	X	X	X	X	X	X	X	X		X			X	

Note: Beneficial uses are regarded as existing whether the water body is perennial or ephemeral, or the flow is intermittent or continuous.

Table 1-3. Basin Plan Existing and Anticipated Uses of Moss Landing Harbor (Coastal Waters)

Coastal Water	REC-1	REC-2	IND	NAV	MAR	SHELL	COMM	RARE	WILD
Moss Landing Harbor	E	E	E	E	E	E[a]	E	E	E

[a] Clamming is an existing beneficial use in the North Harbor and on the south side of the entrance channel to Elkhorn Slough (north of the Pacific Gas and Electric Cooling Water Intake). Presently, no shellfishing use occurs south of the Pacific Gas and Electric Intake.

NOTE: E = Existing beneficial water use.

1.4.1 Beneficial Use Explanations

Municipal and Domestic Supply (MUN) - Uses of water for community, military, or individual water supply systems including, but not limited to, drinking water supply. According to State Board Resolution No. 88-63, "Sources of Drinking Water Policy" all surface waters are considered suitable, or potentially suitable, for municipal or domestic water supply except where:

a. TDS exceeds 3000 mg/l (5000 uS/cm electrical conductivity);

b. Contamination exists, that cannot reasonably be treated for domestic use;

c. The source is not sufficient to supply an average sustained yield of 200 gallons per day;

d. The water is in collection or treatment systems of municipal or industrial wastewaters, process waters, mining wastewaters, or storm water runoff; and

e. The water is in systems for conveying or holding agricultural drainage waters.

Agricultural Supply (AGR) - Uses of water for farming, horticulture, or ranching including, but not limited to, irrigation, stock watering, or support of vegetation for range grazing.

Industrial Process Supply (PROC) - Uses of water for industrial activities that depend primarily on water quality (i.e., waters used for manufacturing, food processing, etc.).

Industrial Service Supply (IND) - Uses of water for industrial activities that do not depend primarily on water quality including, but not limited to, mining, cooling water supply, hydraulic conveyance, gravel washing, fire protection, or oil well repressurization.

Ground Water Recharge (GWR) - Uses of water for natural or artificial recharge of ground water for purposes of future extraction, maintenance of water quality, or halting of saltwater intrusion into freshwater aquifers. Ground water recharge includes recharge of surface water underflow.

Freshwater Replenishment (FRESH) - Uses of water for natural or artificial maintenance of surface water quantity or quality (e.g., salinity) which includes a water body that supplies water to a different type of water body, such as, streams that supply reservoirs and lakes, or estuaries; or reservoirs and lakes that supply streams. This includes only immediate upstream water bodies and not their tributaries.

Navigation (NAV) - Uses of water for shipping, travel, or other transportation by private, military, or commercial vessels. This Board interprets NAV as, "Any stream, lake, arm of the sea, or other natural body of water that is actually navigable and that, by itself, or by its connections with other waters, for a period long enough to be of commercial value, is of sufficient capacity to float watercraft for the purposes of commerce, trade, transportation, and including pleasure; or any waters that have been declared navigable by the Congress of the United States" and/or the California State Lands Commission.

Water Contact Recreation (REC-1) - Uses of water for recreational activities involving body contact with water, where ingestion of water is reasonably possible. These uses include, but are not limited to, swimming, wading, water-skiing, skin and scuba diving, surfing, white water activities, fishing, or use of natural hot springs.

Non-Contact Water Recreation (REC-2) - Uses of water for recreational activities involving proximity to water, but not normally involving body contact with water, where ingestion of water is reasonably possible. These uses include, but are not limited to, picnicking, sunbathing, hiking, beachcombing, camping, boating tidepool and marine life study, hunting, sightseeing, or aesthetic enjoyment in conjunction with the above activities.

Commercial and Sport Fishing (COMM) - Uses of water for commercial or recreational collection of fish, shellfish, or other organisms including, but not limited to, uses involving organisms intended for human consumption or bait purposes.

Warm Fresh Water Habitat (WARM) - Uses of water that support warm water ecosystems including, but not limited to, preservation or enhancement of aquatic habitats, vegetation, fish, or wildlife, including invertebrates.

Cold Fresh Water Habitat (COLD) - Uses of water that support cold water ecosystems including, but not limited to, preservation or enhancement of aquatic habitats, vegetation, fish or wildlife, including invertebrates.

Estuarine Habitat (EST) - Uses of water that support estuarine ecosystems including, but not limited to, preservation or enhancement of estuarine habitats, vegetation, fish, shellfish, or wildlife (e.g., estuarine mammals, waterfowl, shorebirds). An estuary is generally described as a semi-enclosed body of water having a free connection with the open sea, at least part of the year and within which the seawater is diluted at least seasonally with fresh water drained from the land. Included are water bodies which would naturally fit the definition if not controlled by tidegates or other such devices.

Marine Habitat (MAR) - Uses of water that support marine ecosystems including, but not limited to, preservation or enhancement of marine habitats, vegetation such as kelp, fish, shellfish, or wildlife (e.g., marine mammals, shorebirds).

Wildlife Habitat (WILD) - Uses of water that support terrestrial ecosystems including, but not limited to, preservation and enhancement of terrestrial habitats, vegetation, wildlife (e.g., mammals, birds, reptiles, amphibians, invertebrates), or wildlife water and food sources.

Preservation of Biological Habitats of Special Significance (BIOL) - Uses of water that support designated areas or habitats, such as established refuges, parks, sanctuaries, ecological reserves, or Areas of Special Biological Significance (ASBS), where the preservation or enhancement of natural resources requires special protection.

Rare, Threatened, or Endangered Species (RARE) - Uses of water that support habitats necessary, at least in part, for the survival and successful maintenance of plant or animal species established under state or federal law as rare, threatened, or endangered.

Migration of Aquatic Organisms (MIGR) - Uses of water that support habitats necessary for migration or other temporary activities by aquatic organisms, such as anadromous fish.

Spawning, Reproduction, and/or Early Development (SPWN) - Uses of water that support high quality aquatic habitats suitable for reproduction and early development of fish.

Shellfish Harvesting (SHELL) - Uses of water that support habitats suitable for the collection of filter-feeding shellfish (e.g., clams, oysters, and mussels) for human consumption, commercial, or sport purposes. This includes waters that have in the past, or may in the future, contain significant shellfisheries.

1.5 Statement of Impairment

The narrative water quality objectives for toxicity and pesticides (see Section 1.3 Water Quality Objectives) have been exceeded for the waterbody/pollutant combinations shown in Table 1-1. The assessment of impairment is described in Section 3.2.

2 WATERSHED DESCRIPTION

The Lower Salinas River Watershed is essentially comprised of two major drainage ways leading to Moss Landing Harbor and Salinas River Lagoon (North). The drainages to Moss Landing Harbor include Old Salinas River Estuary, Tembladero Slough, Alisal Slough Remnant, Espinosa Slough, Salinas Reclamation Canal (Lower and Upper), Gabilan Creek, and Natividad Creek. The drainages to Salinas River Lagoon (North) include the Salinas River, Blanco Drain, Quail Creek, and Chualar Creek. There is hydraulic connectivity between the Salinas River Lagoon (North) and the Old Salinas River Estuary via a slide gate at the northwest end of the Salinas River Lagoon (North). There is occasional hydraulic connectivity between Alisal Slough Remnant and the Lower Salinas Reclamation Canal via an agricultural ditch.

Figure 2-1 displays the separate watersheds within the project area and Table 2-1 relates the numeric code in the figure to the watershed name and size. Note that the extent of Salinas River watershed (ID No. 8) was obtained from CalWater version 2.2 (California Interagency Watershed Map of 1999) for Lower Salinas Valley Hydrologic Area 309.10.

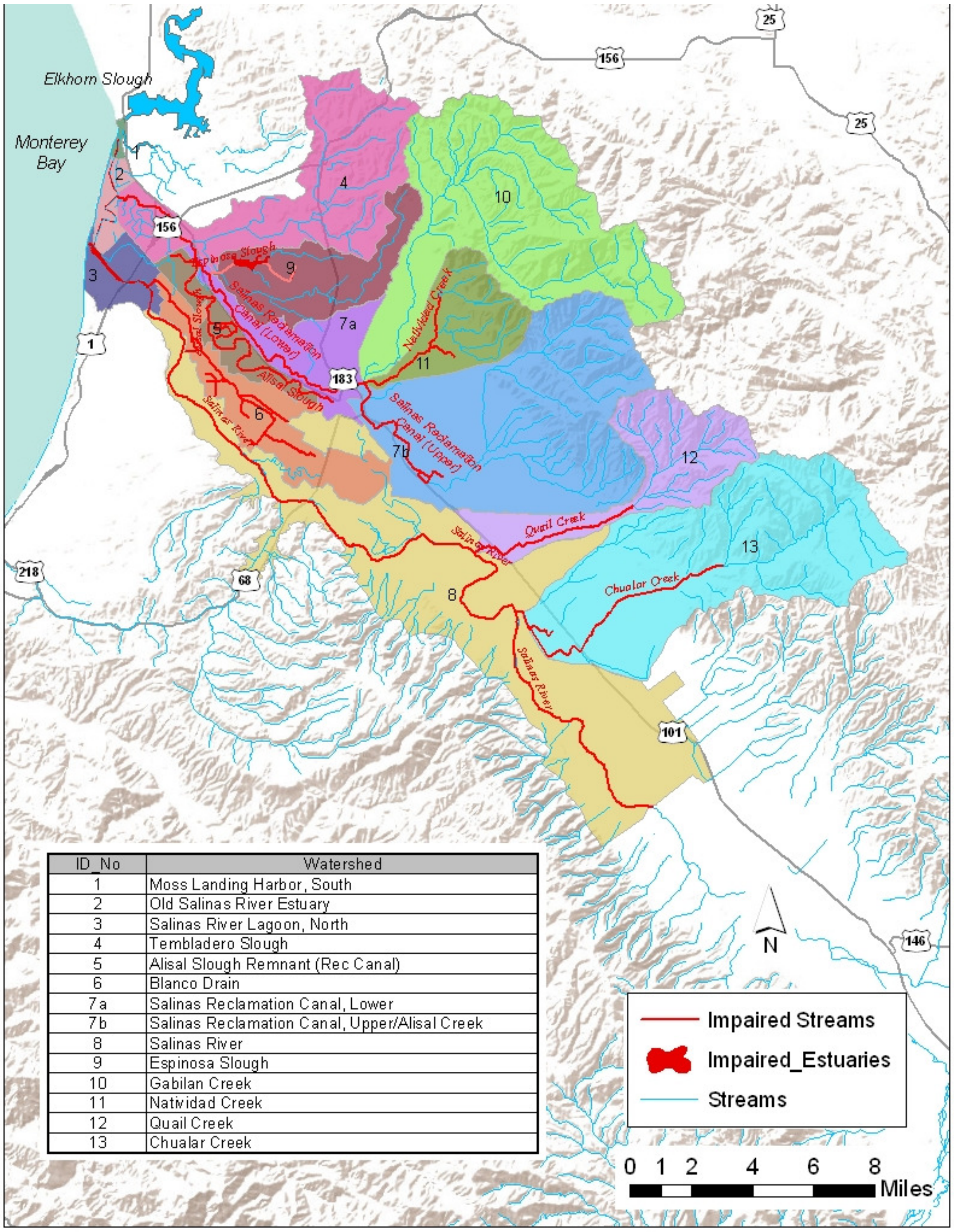


Figure 2-1. Watersheds within the project area.
(Impaired waterbodies shown in red)

Table 2-1. Watershed areas illustrated in Figure 2-1.

Watershed Number	Watershed	Area (Acres)
1	Moss Landing Harbor, South	273
2	Old Salinas River Estuary	1,462
3	Salinas River Lagoon, North	3,058
4	Tembladero Slough	16,737
5	Alisal Slough Remnant (Rec Canal)	3,703
6	Blanco Drain	8,300
7a	Salinas Reclamation Canal, Lower	6,563
7b	Salinas Reclamation Canal, Upper/Alisal Creek	29,601
8	Salinas River	40,595
9	Espinosa Slough	8,646
10	Gabilan Creek	27,713
11	Natividad Creek	7,405
12	Quail Creek	11,236
13	Chualar Creek	29,888
Total Acreage		195,180

2.1 Land Use/Land Cover (LULC)

Staff estimated the acreage of different land uses within the various watersheds using the National Land Cover Data (NLCD) provided by the Multi-Resolution Land Characteristics Consortium (MRLC, 1992). The MRLC membership includes the U.S. Geological Survey (USGS), Environmental Protection Agency (EPA), National Oceanic and Atmospheric Administration (NOAA) and the U.S. Forest Service (USFS) the National Atmospheric and Space Administration (NASA) and the Bureau of Land Management (BLM). Staff used the 1992 land use data because it is the best land use layer available, and although there has been some development in and around the cities in the analysis area, the basic land uses are similar to what the were in 1992.

The NLCD was derived from images acquired by Landsat's Thematic Mapper (TM) sensor, as well as a number of ancillary data sources. Land use categories in Figure 2-2 and Table 2-2 are aggregate categories based on the original level II classification scheme for the NLCD.

In Figure 2-2 the reader can see that the agricultural lands are concentrated in the valley bottom and in flat land near the bay. Salinas is the large developed area in the center of the figure. There is scattered development northeast of Castroville.

Grasslands, shrublands and forested lands are found in the hills and mountains on the eastern side of the valley floor.

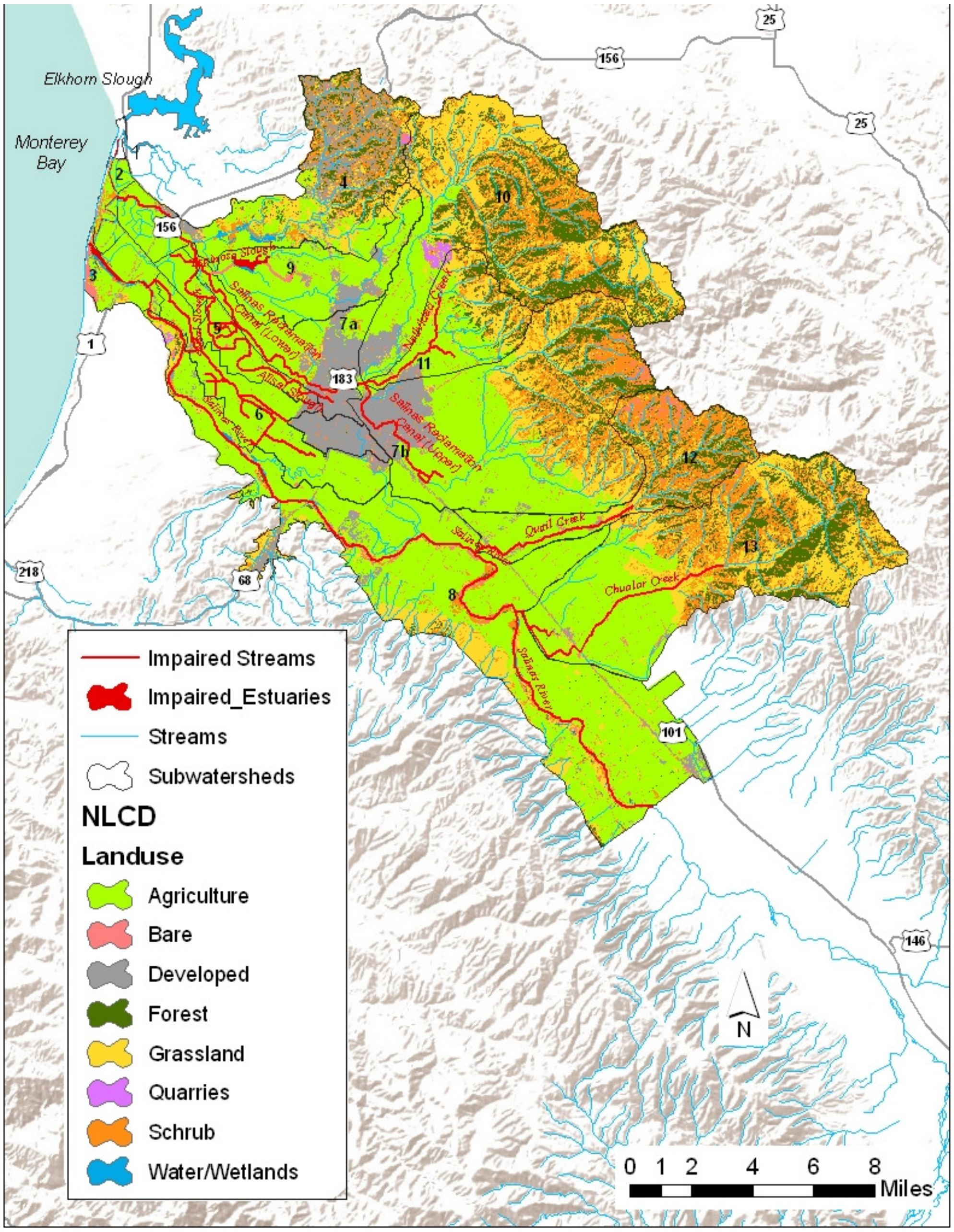


Figure 2-2. Land Use/Land Cover (Listed waterbodies shown in red)

Table 2-2. Land Use/Land Cover Acreage for Project Area (MRLC 1992)

	Watershed	Total Watershed Acreage	Agriculture	Bare	Developed	Forest	Grassland	Quarries	Shrub	Water Feature/ Wetland
1	Moss Landing Harbor, South	273	16	41	70	2	34	0	44	67
2	Old Salinas River Estuary	1,462	1,194	39	63	0	10	0	145	10
3	Salinas River Lagoon, North	3,058	2,159	306	104	12	125	0	199	147
4	Tembladero Slough	16,737	5,322	218	2,042	1,992	4,034	33	2,912	201
5	Alisal Slough Remnant (Rec Canal)	3,703	3,514	52	126	0	7	0	4	0
6	Blanco Drain	8,300	7,702	83	390	0	66	0	50	0
7a	Salinas Reclamation Canal, Lower	6,563	3,669	112	2,271	0	374	0	138	0
7b	Salinas Reclamation Canal, Upper/Alisal Creek	29,601	11,633	474	2,338	2,871	6,542	0	5,713	0
8	Salinas River	40,595	23,626	1,096	2,639	568	10,839	81	1,583	122
9	Espinosa Slough	8,646	7,003	130	674	69	597	0	78	86
10	Gabilan Creek	27,713	3,547	139	776	7,178	9,644	333	6,069	0
11	Natividad Creek	7,405	3,584	59	281	837	1,918	22	681	15
12	Quail Creek	11,236	2,427	416	191	2,022	1,843	0	4,326	0
13	Chualar Creek	29,888	7,950	359	149	4,872	10,042	0	6,516	0
	Totals	**195,180.0**	83,348	3,522	12,115	20,423	46,076	469	28,457	83,348

Table 2-3. Land Use/Land Cover % of Project Area (MRLC 1992)

	Watershed	Total Watershed Acreage	% Agriculture	% Bare	% Developed	% Forest	% Grassland	% Quarries	% Shrub	% Water Feature/ Wetlands
1	Moss Landing Harbor, South	273	5.7	14.9	25.7	0.6	12.5		16.1	24.6
2	Old Salinas River Estuary	1,462	81.7	2.7	4.3	0.0	0.7		9.9	0.7
3	Salinas River Lagoon, North	3,058	70.6	10.0	3.4	0.4	4.1		6.5	4.8
4	Tembladero Slough	16,737	31.8	1.3	12.2	11.9	24.1	0.2	17.4	1.2
5	Alisal Slough Remnant (Rec Canal)	3,703	94.9	1.4	3.4	0.0	0.2		0.1	
6	Blanco Drain	8,300	92.8	1.0	4.7	0.0	0.8		0.6	
7a	Salinas Reclamation Canal, Lower	6,563	55.9	1.7	34.6	0.0	5.7		2.1	
7b	Salinas Reclamation Canal, Upper/Alisal Creek	29,601	39.3	1.6	7.9	9.7	22.1		19.3	
8	Salinas River	40,595	58.2	2.7	6.5	1.4	26.7	0.2	3.9	0.3
9	Espinosa Slough	8,646	81.0	1.5	7.8	0.8	6.9		0.9	1.0
10	Gabilan Creek	27,713	12.8	0.5	2.8	25.9	34.8	1.2	21.9	
11	Natividad Creek	7,405	48.4	0.8	3.8	11.3	25.9	0.3	9.2	0.2
12	Quail Creek	11,236	21.6	3.7	1.7	18.0	16.4		38.5	0.0
13	Chualar Creek	29,888	26.6	1.2	0.5	16.3	33.6		21.8	0.0
	Totals	**195,180**	**42.7**	**1.8**	**6.2**	**10.5**	**23.6**	**0.2**	**14.6**	**0.3**

The Alisal Slough watershed maintains the greatest percentage of irrigated agriculture land use at 95%, followed by Blanco Drain (92%), Old Salinas River Estuary (82%), and Espinosa Slough (81%). The Salinas Reclamation Canal (lower) contains the greatest percentage of developed land use at 34%, followed by Moss Landing Harbor (26%).

2.2 Topography

The project area encompasses portions of the Gabilan Range to the east, the Salinas Valley floor north of Gonzalez and the associated coastal plain as well as the rolling sand hills between the north end of the Gabilan Range and Elkhorn Slough. Johnson Peak in the Gabilan Range east of Chualar reaches an elevation of 3,465 feet.

2.3 Climate

Monterey County has a generally mild climate. Temperatures near the coast are uniform throughout the year, but the range widens as distance from the water increases. At inland locations, summers are warm to hot and winters have minimum readings below freezing.

The growing season is as short as 150 days in some mountain areas, but ranges from 200 days to more than 350 days in most areas where cultivated crops area grown.

Precipitation is concentrated in winter. Rain totals range from about 10 inches in drier locations to near or slightly above 80 inches in the coastal mountains. Snowfall in the county is generally insignificant, although a limited amount is received each winter at the higher elevations.

Winds are generally less than 10 to 15 miles per hour, though stronger winds are common to some areas along the coast. Winter storms produce some damaging winds, particularly in open areas and at higher elevations.

The average annual temperature is about 55° F along the coast and in the mountains along the eastern boundary. Annual temperatures of about 60° F are characteristic of the interior valley" (SCS 1978).

Figure 2-3 displays average annual precipitation for the lower Salinas Valley/Elkhorn Slough area. As can be seen in the figure, the valley floor receives 11 inches per year while the Gabilan Range receives twice that amount in the headwaters of Gabilan and Alisal Creeks due to orographic affects.

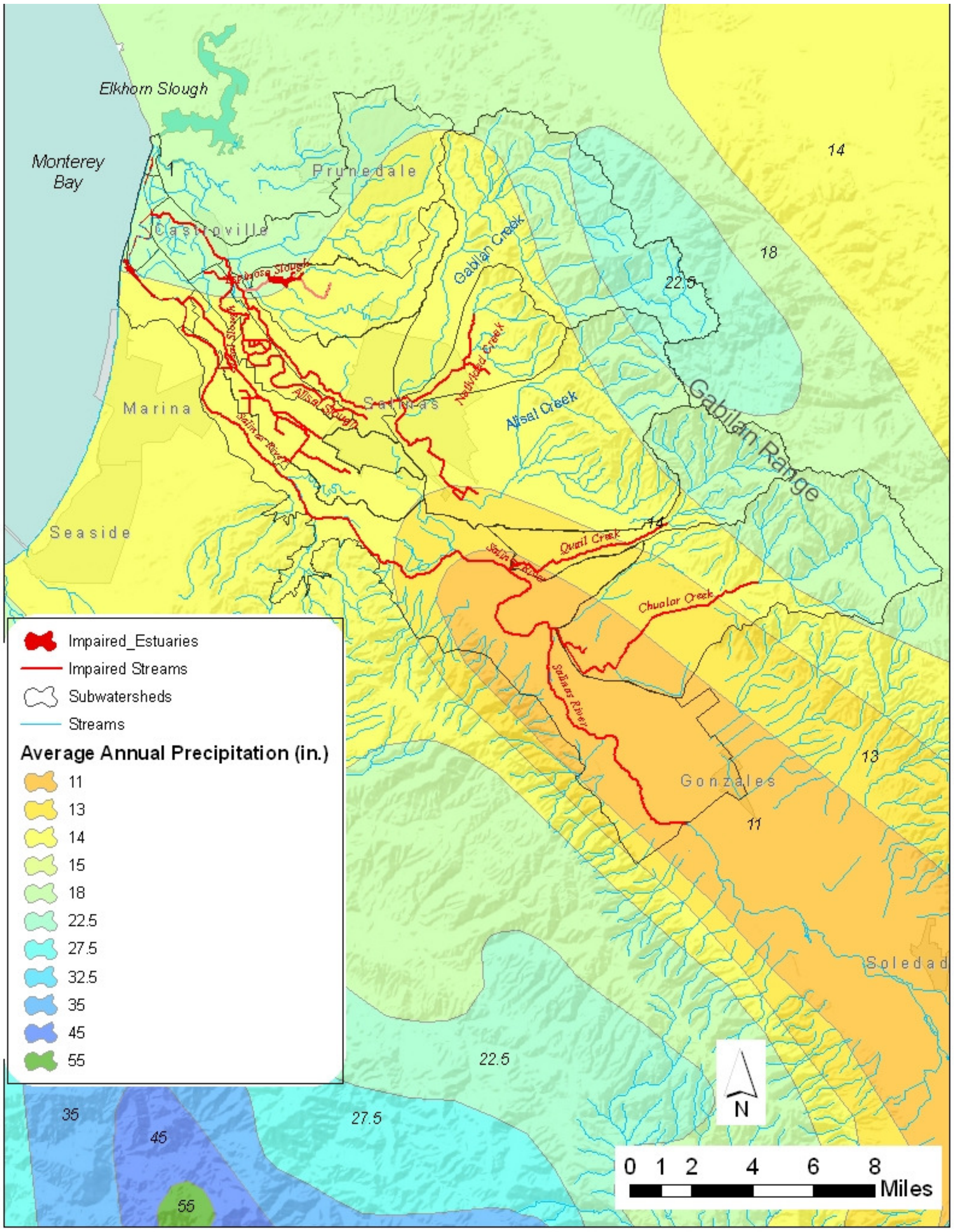


Figure 2-3. Average Annual Precipitation

2.4 Hydrology

Streams in the area may be perennial in the mountains and seasonal in the lowlands with agricultural return flows providing all, or the majority, of the flow in some streams during dry seasons. Some of the waterbodies are tidally influenced, especially those connected to the Elkhorn Slough. These waterbodies include Moss Landing Harbor, Moro Cojo Slough, the Old Salinas River Estuary and lower portions of Tembladero Slough.

The Salinas River Lagoon North may receive salt water from Monterey Bay during winter storms that may overtop the sand bar between the lagoon and the bay. The sand bar is periodically mechanically breached during the winter by the Monterey County Water Resources Agency based on anticipated flood flows in the Salinas River. This breaching usually drains the lagoon to some extent while allowing salt water to flow in.

The streams that have their headwaters in the Gabilan Range are typically flashy streams that may require multiple storms to replenish them before they become fully connected to the bay. The Salinas River typically requires multiple storms before reconnecting to the bay.

Figure 2-4 through 2-6 depict discharge data (USGS, Website) from USGS gage stations located on three waterbodies in the Lower Salinas Valley. Data displayed for each gage is from 1999 to 2009, though the gage at the Reclamation Ditch was inoperable through mid-2002. The Salinas gage at Spreckels has a contributing watershed area of more than 4,000 square miles. Discharge at this gage is also affected by releases at from Lake Nacimiento and Lake San Antonio that are used to replenish groundwater in the Salinas Valley. The Gabilan Creek gage has a contributing watershed of 36.7 sq mi that is mostly upland areas with some agriculture in the valley bottoms. The Salinas Reclamation Canal gage is located downstream of the City of Salinas and has a contributing watershed area of 53.2 sq mi. The Gabilan Creek watershed is part of the larger Salinas Reclamation Canal watershed.

The graphs (note the different scales for discharge) show the flashiness of the watersheds at all flows. Large runoff events are associated with storms that typically arrive during the late fall and winter seasons. Long periods with no, to very low flow were recorded during the discharge period. Spatial variability can be seen by comparing the Salinas River and Gabilan Creek discharges during wet season events from 2003 through 2009, with greater volumes observed for the urbanized watershed represented by the Reclamation Ditch gage. Peak flow for the Salinas River occurred in 2001 while peak flow for the Gabilan Creek occurred during the 2006. Due to the nature and size of the storms on the Central Coast of California and the size of the Salinas River watershed, different areas of the watershed experience different amounts and intensity of rainfall.

Section 7.3.1 contains additional discussion regarding flow frequency within the project area.

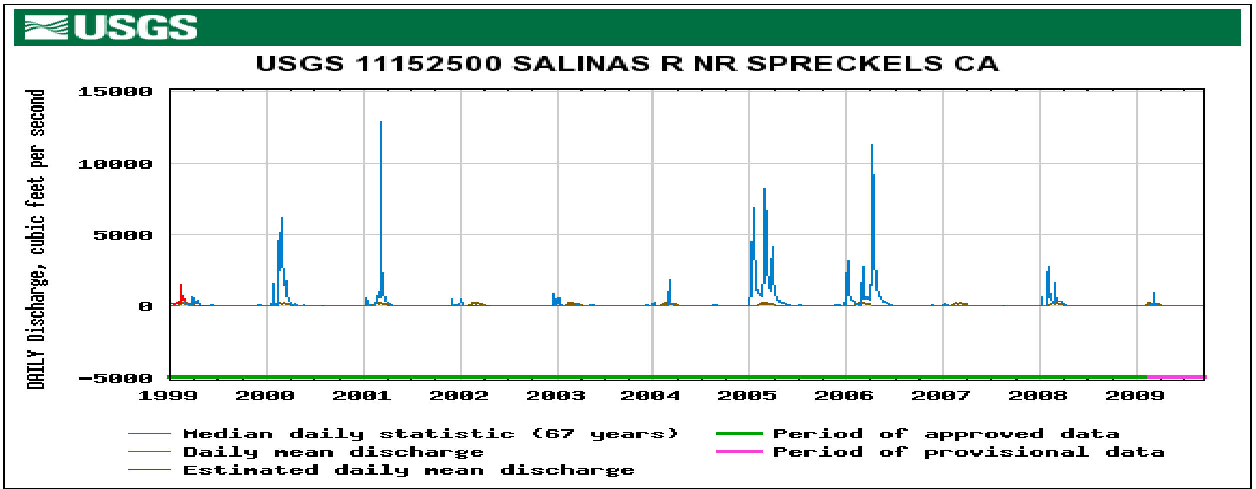


Figure 2-4. Salinas River at Spreckels, Daily Mean Discharge (ft^3/s)

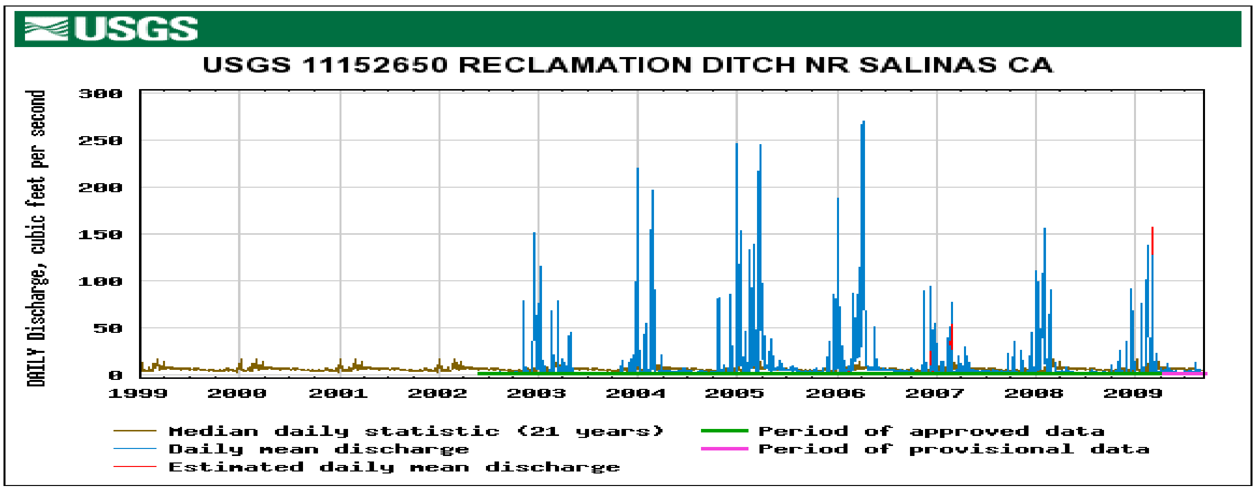


Figure 2-5. Salinas Reclamation Ditch, Downstream of City of Salinas, Daily Mean Discharge (ft^3/s)

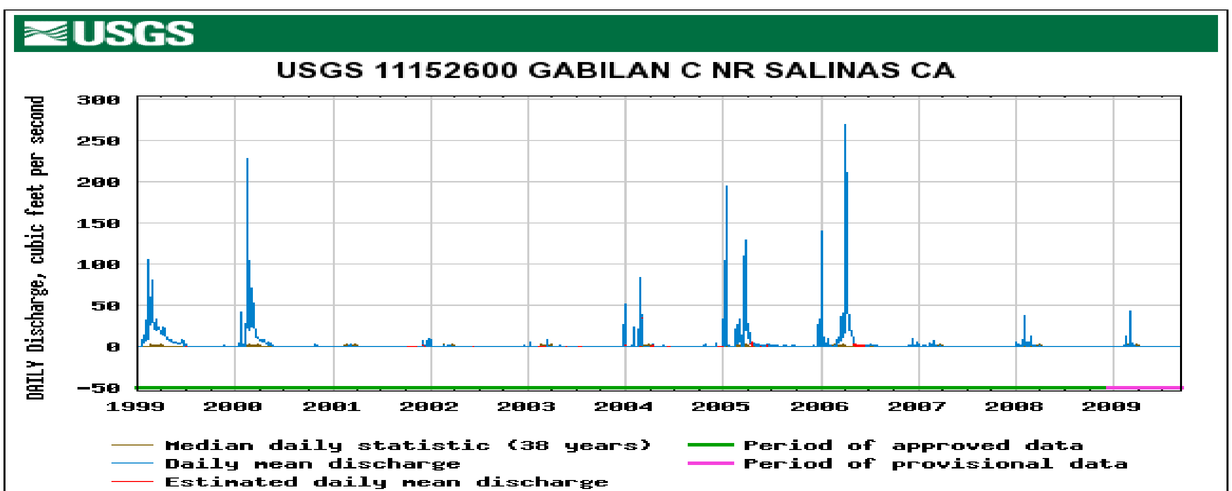


Figure 2-6. Gabilan Creek, Upstream of City of Salinas, Daily Mean Discharge (ft^3/s)

3 DATA ANALYSIS

3.1 Data Sources

Staff used the following documents and data for the development of the TMDL:

- *Ambient Toxicity due to Chlorpyrifos and Diazinon in a Central California Coastal Watershed*, by John Hunt et. al., in Environmental Monitoring and Assessment 82-112, 2003. (Hunt, 2003).
- Department of Pesticide Regulation (DPR) water quality data (2003-2005).
- Central Coast Ambient Monitoring Program (CCAMP) and Surface Water Ambient Monitoring Program (SWAMP) water quality data (March 2004).
- *Monitoring Chlorpyrifos and Diazinon in Impaired Surface Waters of the Lower Salinas Region*, by Central Coast Watershed Studies, Watershed Institute, California Statue University, Monterey Bay. March 31, 2004. (CCoWS, 2004).
- *Phase I Follow-Up Water Quality Monitoring: Organophosphate Pesticide Sampling Final Report*, Central Coast Region Conditional Waiver Cooperative Monitoring Program, by Central Coast Water Quality Preservation, Inc. May 19, 2008. (CCWQP, 2008).
- *Supplemental Water Quality Monitoring for Organophosphate Pesticides and Aquatic Toxicity*, Central Coast Region Conditional Ag Waiver Cooperative Monitoring Program, by Central Coast Water Quality Preservation, Inc. May 28, 2009. (CCWQP, 2009).

Staff also used data contained in the California Department of Pesticide Regulation's (DPR) Surface Water Database to evaluate pesticide use.

3.1.1 Hunt, et. al. (2003)

This study investigated sources and causes of aquatic toxicity in the Lower Salinas River watershed by sampling four sites in the main river and four sites in representative tributaries during 15 surveys between September 1998 and January 2000. In 96 hr toxicity tests, significant *Ceriodaphnia dubia* mortality was observed in 11% of the main river samples, 87% of the samples from a channel draining an urban/agricultural watershed, 13% of the samples from channels conveying agricultural tile drain runoff, and in 100% of the samples from a channel conveying agricultural surface furrow runoff. In six of nine toxicity identification evaluations (TIEs), the organophosphate pesticides diazinon and/or chlorpyrifos were implicated as causes of observed toxicity, and these compounds were the most probable causes of toxicity in two of the other three TIEs. Every sample collected in the watershed that exhibited greater than 50% *C. dubia* mortality (n = 31) had sufficient diazinon and/or chlorpyrifos concentrations to account for the observed effects.

3.1.2 California Department of Pesticide Regulations (DPR) and Surface Water Ambient Monitoring Program (SWAMP)/Central Coast Ambient Monitoring Program (CCAMP)

The California Department of Pesticide Regulation (DPR) collected water quality data from eight sites within the Lower Salinas River watershed. Chlorpyrifos and diazinon data was obtained from 2003 through 2005. Table 3-1 lists the monitoring site codes and site descriptions and Figure 3-1 depicts monitoring site locations. A summary of water quality sampling results is contained in Table 3-3.

The SWAMP and CCAMP conducted a joint a sediment toxicity study in March 2004 that consisted of three sites within the project area. Though the study focused on sediment chemical analysis, interstitial water samples were collected and analyzed for chlorpyrifos and diazinon. Table 3-2 lists the monitoring site codes and site descriptions and Figure 3-1 depicts monitoring site locations. A summary of water quality sampling results is contained in Table 3-4.

Table 3-1. DPR monitoring sites.

DPR Site Code	Site Description
309REC-DLT_DPR	Alisal Slough (Reclamation Ditch), Moffett St. ca 0.15 mi SE of Airport Blvd.
309BLA-COO_DPR	Blanco Drain at Cooper Rd, ca 0.2 mi. S of Nashua Rd, drains to Salinas R.
309CRR_DPR	Chualar Creek at Chualar River Rd., ca. 1.2 mi. from HWY 101 (trib. to Salinas R.)
309QUI_DPR	Quail Creek at HWY 101, btwn Spence and Potter Roads (trib. to Salinas R.)
309DAV_DPR	Salinas River at Davis Rd.
309POT_DPR	Old Salinas River at Potrero
309JON_DPR	Reclamation Ditch at San Jon Road
309SBR_DPR	Salinas River at Del Monte (Hwy 1)

Table 3-2. SWAMP/CCAMP monitoring sites.

SWAMP/CCAMP Site Code	Description
309TDW	SWAMP_CCAMP Tembledero Sl at Monterey Dunes
309DAV	SWAMP_CCAMP Salinas R. at Davis Rd
309OLD	SWAMP_CCAMP Old Salinas R. at Monterey Dunes

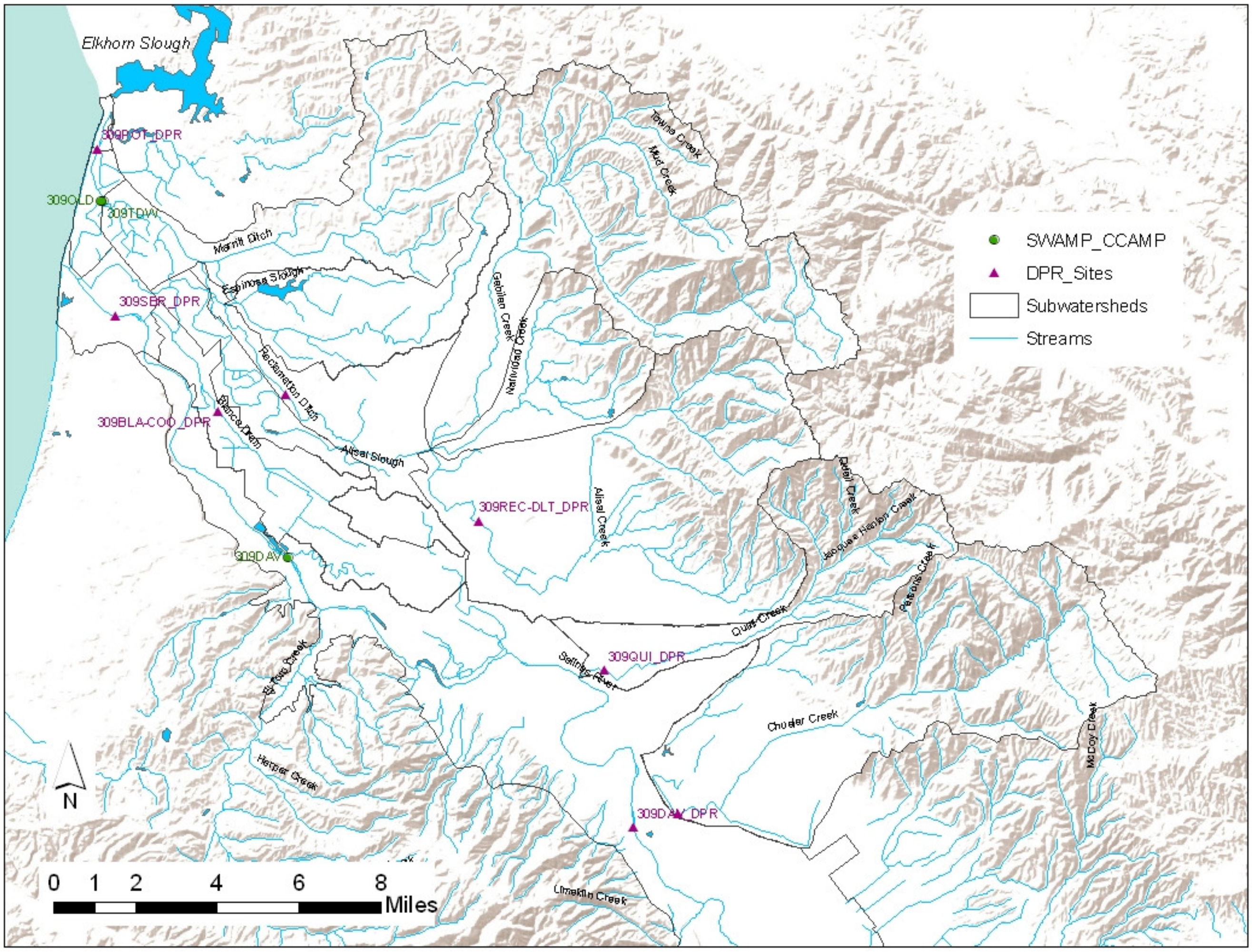


Figure 3-1. DPR and SWAMP_CCAMP monitoring sites.

Table 3-3. Summary of DPR monitoring results.

DPR Site Code	# Chlorpyrifos samples	# Chlorpyrifos Exceedances [1]	% Chlorpyrifos Exceedances	# Diazinon Samples	# Diazinon Exceedances [2]	% Diazinon Exceedances
309POT_DPR	3	2	66.7	3	1	33.3
309SBR_DPR	3	0	0.0	3	0	0.0
309BLA-COO_DPR	16	1	6.3	16	6	37.5
309JON_DPR	3	3	100.0	3	2	66.7
309REC-DLT_DPR	16	1	6.3	16	16	100.0
309DAV_DPR	3	0	0.0	3	0	0.0
309QUI_DPR	19	19	100.0	19	9	47.4
309CRR_DPR	16	12	75.0	16	6	37.5

[1] Chlorpyrifos exceedance criteria of 0.025 µg/L.
[2] Diazinon exceedance criteria of 0.160 µg/L.

Staff used guidance criteria of 0.025 micrograms per liter (µg/L) for chlorpyrifos and 0.160 µg/L for diazinon (Sipmann and Finlayson, 2000) to protect aquatic life beneficial uses. Note that the Listing Policy states the minimum number of measured exceedances needed to assert impairment for toxicants are 2 exceedances in a minimum sample size of 2 – 24 samples (see Table 3.1 of the Listing Policy).

For the DPR data, staff concluded that chlorpyrifos guidance criteria were exceeded at 6 of the 8 monitoring stations and that chlorpyrifos impairment may be asserted for 4 monitoring stations (309POT_DPR, 309JON_DPR, 309QUI_DPR, and 309CRR_DPR). Staff also concluded that diazinon guidance criteria were exceeded at 6 of the 8 stations and that diazinon impairment may be asserted for 5 monitoring stations (309BLA-COO_DPR, 309JON_DPR, 309REC-DLT_DPR, 309QUI_DPR, and 309CRR_DPR).

Table 3-4. Summary of SWAMP/CCAMP monitoring results

SWAMP/CAMP Site Code	# Chlorpyrifos samples	# Chlorpyrifos Exceedances [1]	% Chlorpyrifos Exceedances	# Diazinon Samples	# Diazinon Exceedances	% Diazinon Exceedances [2]
309OLD	1	1	100.0	1	0	0.0
309TDW	1	1	100.0	1	0	0.0
309DAV	1	1	100.0	1	0	0.0

[1] Chlorpyrifos guidance criteria of 0.025 µg/L.
[2] Diazinon guidance criteria of 0.160 µg/L.

For the SWAMP/CCAMP data, staff concluded that chlorpyrifos guidance criteria was exceeded at all three sites, however the minimum number of exceedances and minimum sample size was not met (e.g., only one sample and one exceedance). Diazinon concentrations were not above 0.160 µg/L.

3.1.3 Central Coast Watershed Studies (CCoWS)

The CCoWs study established nine different sites on listed waterbodies. Twelve samples were collected at each site during the summer dry seasons of 2002-2003 and three samples were collected at each site during storms occurring in November 2002, February 2003 and March 2003. Each sample consisted of a water column, a suspended sediment sample and a bottom sediment sample that were analyzed for chlorpyrifos and diazinon concentrations using enzyme-linked immunosorbant assays (ELISA) technology.

Table 3-5 describes the sites and Figure 3-2 depicts the site locations within the project area.

Table 3-5. CCoWS Monitoring Sites.

Waterway	Location	Site Code	Waterbody type
Salinas River	Davis Rd.	SAL-DAV	Large river
Salinas Lagoon	Del Monte Rd.	SAL-MON	Seasonal lagoon
Blanco Drain	Cooper Rd.	BLA-COO	Large ag. ditch
Blanco Drain	Pump-out station	BLA-PUM	Slough
Reclamation Ditch	San Jon Rd.	REC-JON	Large ag./urban canal
Old Salinas River	Potrero Rd.	OLS-POT	Back-beach swale
Moss Landing Harbor	Sandholdt Rd.	MOS-SAN	Artificial harbor
Espinosa Slough tributary	Rogers Rd.	EP1-ROG	Ag. ditch
Espinosa Slough	NE end of lake	EPL-EPL	Perennial lake

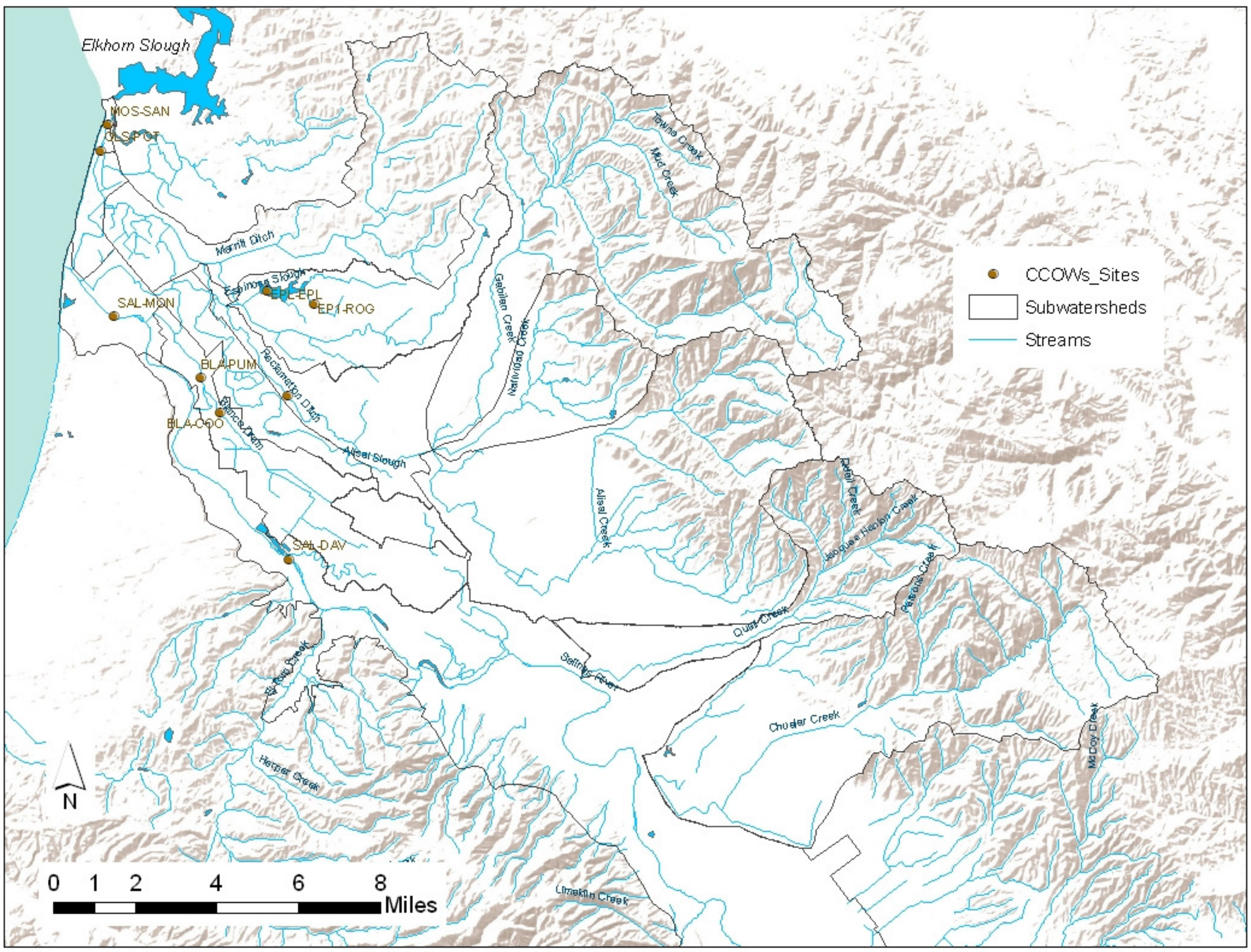


Figure 3-2. CCoWS monitoring sites.

Table 3-6. Summary of CCoWS monitoring results

CCoWS Site Code	# Chlorpyrifos samples	# Chlorpyrifos Exceedances [1]	% Chlorpyrifos Exceedances	# Diazinon Samples	# Diazinon Exceedances	% Diazinon Exceedances [2]
MOS-SAN	18	18	100.0	18	3	16.7
OLS-POT	22	22	100.0	22	10	45.5
SAL-MON	19	17	89.5	19	1	5.3
BLA-PUM	18	17	94.4	18	4	22.2
BLA-COO	23	22	95.7	22	7	31.8
REC_JON	24	24	100.0	24	22	91.7
SAL-DAV	22	20	90.9	22	6	27.3
EP1-ROG	23	23	100.0	22	21	95.5
EPL-EPL	16	16	100.0	16	2	12.5

[1] Chlorpyrifos guidance criteria of 0.025 µg/L.
[2] Diazinon guidance criteria of 0.160 µg/L.

For the CCoWS data, staff concluded that guidance criteria for both chlorpyrifos and diazinon were exceeded at all of the monitoring stations, with the exception of diazinon at station SAL-MON. Staff concluded that all of the waterbodies are impaired due to excessive levels of both chlorpyrifos and diazinon, with the exception of diazinon at station SAL-MON.

3.1.4 Cooperative Monitoring Program

The Cooperative Monitoring Program fulfills monitoring and reporting requirements for all dischargers enrolled under the Conditional Waiver of Waste Discharge Requirements for Discharges from Irrigated Lands in the Central Coast Region. Monitoring and reporting is conducted by Central Coast Water Quality Preservation, Inc. (CCWQP). Phase I of the monitoring program began in January of 2005 with monthly surface water grab sampling. Many of the sites showed significant, repeated toxicity to invertebrates which prompted a Phase I Follow-up and subsequent report.

Phase I Follow-up monitoring was conducted between August, 2006 and March, 2007 and included 15 sites within the TMDL project area. Sampling was conducted in August and September 2006 and in February and March 2007. The sites were distributed as follows: 3 sites in the mainstem Salinas River, 8 in creeks or sloughs receiving agricultural drainage, 1 in an agricultural drain, 2 in the Salinas Reclamation Canal, and 1 site in a slough receiving tidal inputs influenced by water from the Salinas River. Table 3-7 describes the sites and Figure 3-3 depicts the site locations within the project area. It is important to note that 2 sites Chualar Creek (309CRR) and Gabilan Creek (309GAB) did not have flowing water during any of the sampling events and therefore were not sampled.

Table 3-7. CCWQP Monitoring Sites

Site Description	Site_ID	Site_Type
Moro Cojo Slough at Highway 1	306MOR	Tributary Creek
Old Salinas River at Monterey Dunes Way	309OLD	River
Tembladero Slough at Haro	309TEH	Tributary Creek
Merritt Ditch u/s Highway 183	309MER	Drain
Espinosa Slough u/s Alisal Slough	309ESP	Tributary Creek
Alisal Slough at White Barn	309ASB	Tributary Creek
Blanco Drain Below Pump	309BLA	Drain
Salinas Reclamation Canal at San Jon Road	309JON	Canal
Gabilan Creek at Boronda Road	309GAB	Tributary Creek
Natividad Creek u/s Salinas Reclamation Canal	309NAD	Tributary Creek
Salinas Reclamation Canal at La Guardia	309ALG	Canal
Salinas River at Spreckels Gauge	309SSP	River
Quail Creek at Highway 101	309QUI	Tributary Creek
Salinas River at Chualar Bridge on River Road	309SAC	River
Chualar Creek at Chualar River Road	309CRR	Tributary Creek

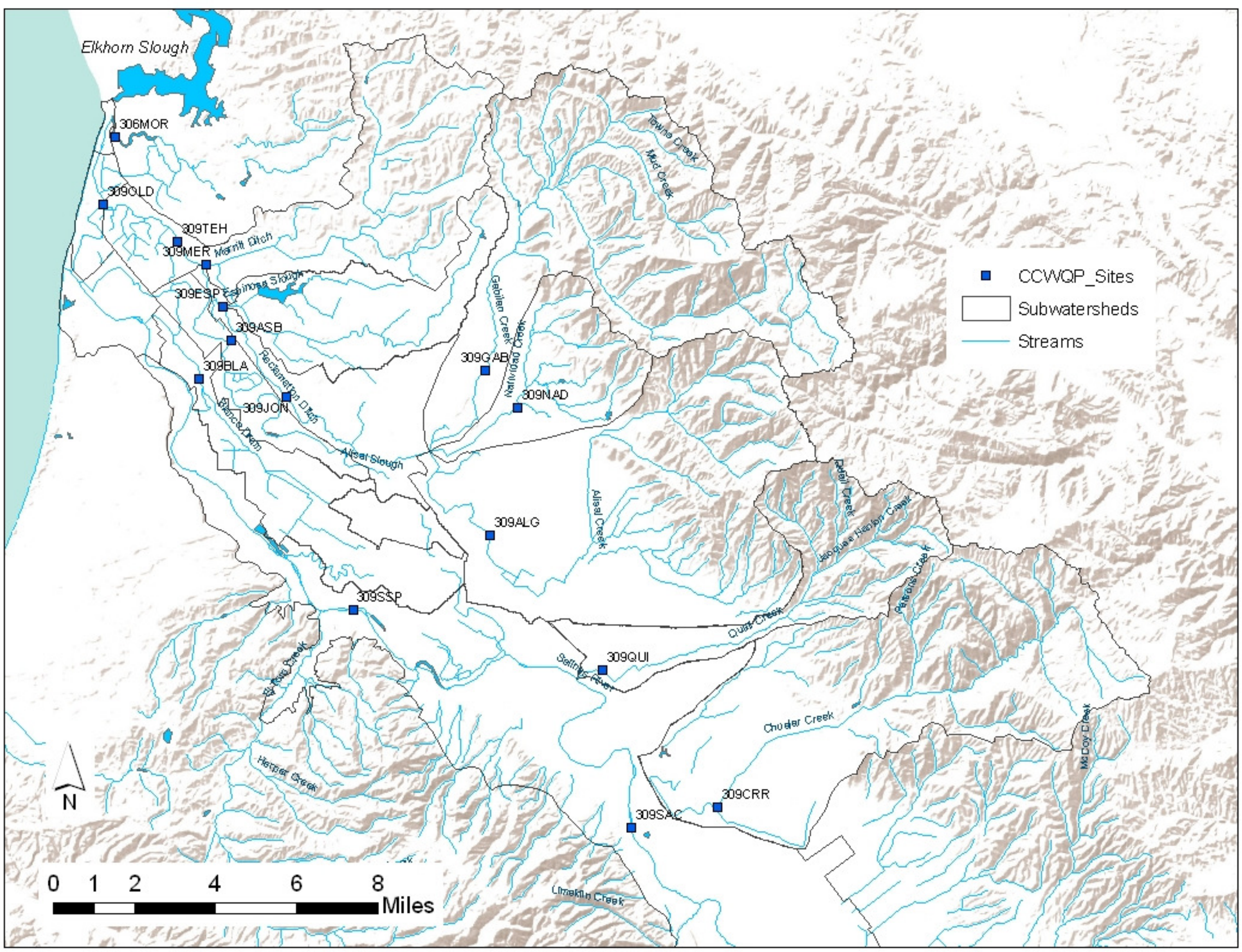


Figure 3-3. CCWQP monitoring sites.

Figure 3-4 depicts flow and water column concentrations of chlorpyrifos and diazinon from the CCWQP Phase 1 Follow-up study that was conducted from August 2006 to March 2007.

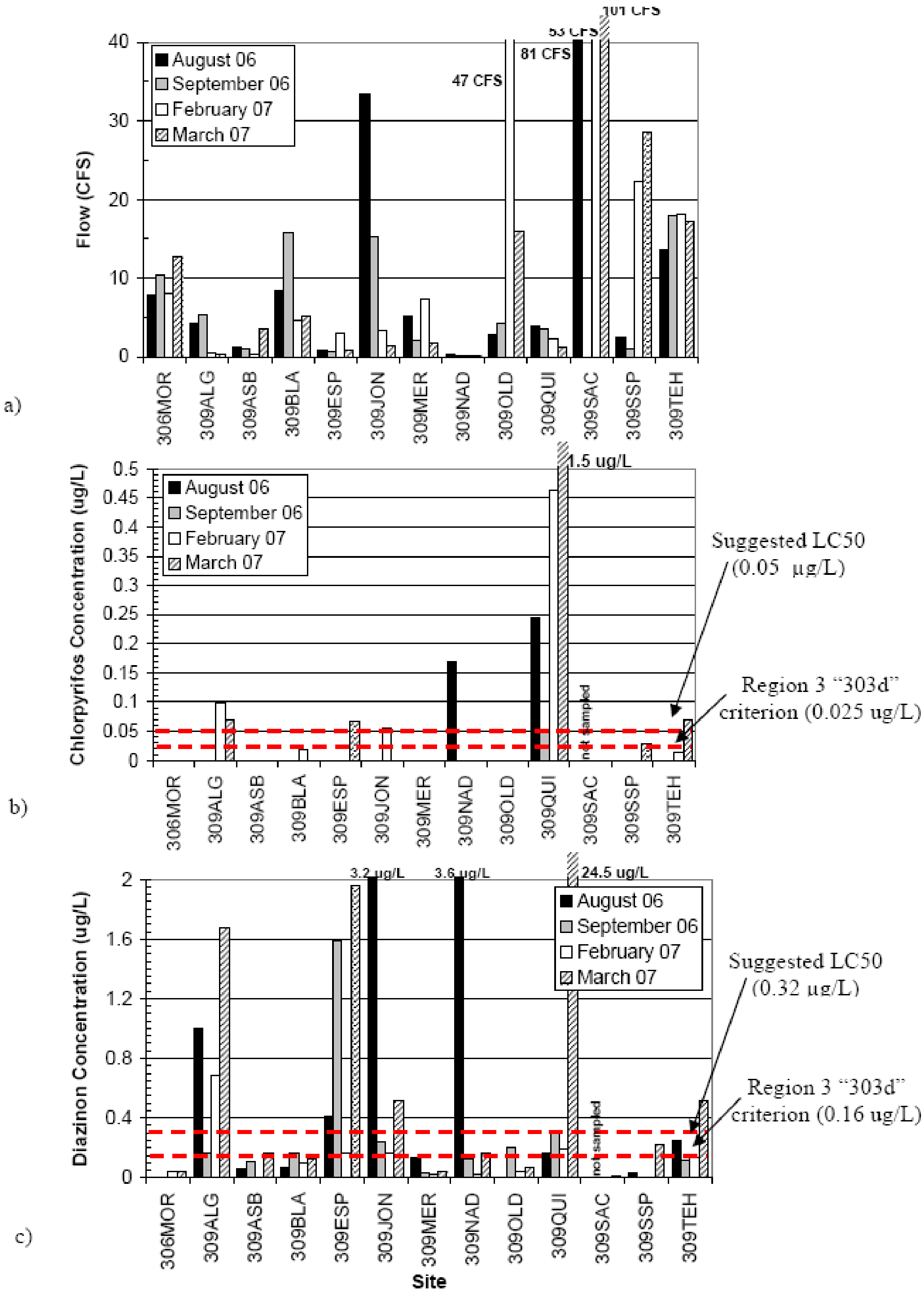


Figure 3-4. CCWQP flow and concentration results.
Flows (a), and concentrations of chlorpyrifos (b), and diazinon (c) for CCWQP monitoring sites. Suggested median lethal concentrations (LC50s) (Bailey et al., 1997) and Central Coast Water Board 303(d) listing criterion indicated by red dashed lines (from CCWQP, 2008).

The highest concentrations for both chlorpyrifos and diazinon were observed at the Quail Creek monitoring station in March 2007 at 1.5 µg/L and 24.5 µg/L, respectively. In addition, guidance criterion for chlorpyrifos and diazinon was exceeded in every water sample obtained from the Quail Creek monitoring station.

Chlorpyrifos and/or diazinon guidance criterion was exceeded at all monitoring stations with the exception of Moro Cojo Slough (306MOR), Merritt Ditch (309MER), and Salinas River at Chualar Bridge (309SAC). A temporal (seasonal) association could not be established for either chlorpyrifos and/or diazinon exceedances.

The CCWQP conducted additional monitoring to supplement the Phase 1 Follow-up and also collaborated with Dow Agrosciences and the DPR for additional water quality monitoring (CCWQP, 2009). In September 2007 and September 2008, water samples from the 25 Phase 1 sites were again analyzed for OP pesticides. The September 2007 effort was identical to the four original Phase 1 Follow-up OP monitoring events described in the preceeding paragraphs. The September 2008 effort was a collaborative effort with Dow Agrosciences, who were conducting OP pesticide monitoring in response to a DPR reevaluation of chlorpyrifos products (Bret and Poletika 2009). This work was conducted similarly to the CMP's original Phase I Follow-up OP monitoring project, with a few minor differences in site locations to explore areas beyond the CMP's Phase 1 watersheds. Finally, in August 2008, CMP staff collected samples for several classes of chemical constituents with DPR staff at 4 sites in the Lower Salinas and Lower Pajaro areas. The monitoring of chemical constituents by DPR was part of a long-term pesticide monitoring effort in progress by DPR in high-use agricultural areas (Starner 2008).

Table 3-8 provides a summary of CCWQP, Dow Agrosciences, and DPR monitoring results.

Table 3-8. Summary of CCWQP monitoring results (includes Dow Agrosciences and DPR monitoring results).

CCWQP Site Code	# Chlorpyrifos samples	# Chlorpyrifos Exceedances [1]	% Chlorpyrifos Exceedances	# Diazinon Samples	# Diazinon Exceedances [2]	% Diazinon Exceedances
306MOR	5	0	0.0	5	0	0.0
309OLD	5	0	0.0	5	1	20.0
309TEH	8	2	25.0	8	3	37.5
309MER	5	0	0.0	5	1	20.0
309ASB	5	0	0.0	5	2	40.0
309BLA	6	0	0.0	6	1	16.7
309JON	6	1	16.7	6	5	83.3
309ALG	8	3	37.5	8	8	100.0
309SSP	4	1	25.0	4	1	25.0
309SAC	4	0	0.0	4	0	0.0
309ESP	6	1	16.7	6	5	83.3
309GAB	Dry	Dry	Dry	Dry	Dry	Dry
309NAD	5	1	20.0	5	2	40.0
309QUI	6	6	100.0	6	6	100.0
309CRR	1	1	100.0	1	0	0.0

[1] Chlorpyrifos guidance criteria of 0.025 µg/L.
[2] Diazinon guidance criteria of 0.160 µg/L.

For the CCWQP data, staff concluded that guidance criteria for chlorpyrifos was exceeded at Tembladero Slough (309TEH), the Salinas Reclamation Canal (309ALG), and Quail Creek (309QUI). Diazinon criteria was exceeded at Tembladero Slough (309TEH), Alisal Slough (309ASB), Salinas Reclamation Canal at Jon Road (309JON), Salinas Reclamation Canal at White Barn (309ALG), Espinosa Slough (309ESP), Natividad Creek (309NAD), and Quail Creek (309QUI).

3.2 Impairment Assessment

To determine waterbody impairment due to excessive levels of chlorpyrifos and/or diazinon, staff performed an assessment in accordance with the State Water Resources Control Board Water Quality Control Policy for Developing California's Clean Water Act Section 303(d) List, September 2004 (Listing Policy. SWRCB, 2004). Table 3.1 of the Listing Policy specifies the minimum number of measured exceedances needed to place a water segment on the Section 303(d) list for toxicants (SWRCB, 2004, pg. 9). Using the binomial distribution, waters shall be placed on the section 303(d) list if the number of measured exceedances supports rejection of the null hypothesis as presented in Table 3.1. Staff used evaluation guidelines of 0.025 micrograms per liter (µg/L) for chlorpyrifos and 0.16 µg/L for diazinon (Sipmann and Finlayson, 2000) to protect aquatic life beneficial uses. Additional information pertaining to derivation of evaluation guidelines are contained in Section 5, *Numeric Targets*.

Table 3-9 tabulates all of the waterbodies, monitoring programs, and waterbodies that formulated this impairment assessment and Table 3-10 summarizes the results of the impairment assessment for each waterbody.

Table 3-9. Summary of monitoring programs, monitoring sites, and waterbodies assessed.

			Monitoring Programs and Site Identification Codes				
Site Description	Watershed ID	Waterbody	CCWQP Code [1]	CCoWs Code	DPR Code	SWAMP CAMP	Site_Type
Moro Cojo Slough at Highway 1	1	Moro Cojo Slough	306MOR				Tributary Creek
Moss Landing Harbor at Sandholdt Rd	1	Moss Landing Harbor		MOS-SAN			Artificial harbor
Old Salinas River at Monterey Dunes Way	2	Old Salinas River	309OLD			309OLD	River
Old Salinas River at Potrero Rd.	2	Old Salinas River		OLS-POT	309POT_DPR		Back-beach swale
Salinas River Lagoon at Del Monte Rd	3	Salinas Lagoon		SAL-MON	309SBR_DPR		Seasonal lagoon
Tembladero Slough at Haro	4	Tembladero Slough	309TEH				Tributary Creek
Merritt Ditch u/s Highway 183	4	Merritt Ditch	309MER				Drain
Tembladero Slough at Monterey Dunes	4	Tembladero Slough				309TDW	Tributary Creek
Alisal Slough at White Barn	5	Alisal Slough	309ASB				Tributary Creek
Blanco Drain Below Pump	6	Blanco Drain	309BLA	BLA-PUM			Drain
Blanco Drain at Cooper Rd	6	Blanco Drain		BLA-COO	309BLA-COO_DPR		Large ag. ditch
Salinas Reclamation Canal at San Jon Road	7a	Salinas Reclamation Canal (Lower)	309JON	REC-JON	309JON_DPR		Ag/Urban Canal
Salinas Reclamation Canal at La Guardia	7b	Salinas Reclamation Canal (Upper)	309ALG				Canal
Salinas Reclamation Canal at Moffett St.	7b	Salinas Reclamation Canal (Upper)			309REC-DLT_DPR		Canal
Salinas River at Spreckels Gauge	8	Salinas River	309SSP				River
Salinas River at Chualar Bridge on River Road	8	Salinas River	309SAC				River
Salinas River at Davis Rd	8	Salinas River		SAL-DAV	309DAV_DPR	309DAV	River
Espinosa Slough u/s Alisal Slough	9	Espinosa Slough	309ESP				Tributary Creek
Espinosa Slough tributary at Rogers Rd	9	Espinosa Slough tributary		EP1-ROG			Ag. ditch
Espinosa Slough at NE end of lake	9	Espinosa Slough		EPL-EPL			Perennial lake
Gabilan Creek at Boronda Road	10	Gabilan Creek	309GAB				Tributary Creek
Natividad Creek u/s Salinas Reclamation Canal	11	Natividad Creek	309NAD				Tributary Creek
Quail Creek at Highway 101	12	Quail Creek	309QUI		309QUI_DPR		Tributary Creek
Chualar Creek at Chualar River Road	13	Chualar Creek	309CRR		309CRR_DPR		Tributary Creek

[1] Includes follow-up sampling in coordination with California Department of Pesticide Regulation (DPR) and DOW AgroSciences, LLC.

Table 3-10. Summary of monitoring programs, monitoring sites, exceedances, and impaired waterbodies.

Watershed ID [1]	Waterbody	Program/Site Code	# Chlorpyrifos samples	# Chlorpyrifos Exceedances [2]	% Chlorpyrifos Exceedances	# Diazinon Samples	# Diazinon Exceedances [3]	% Diazinon Exceedances	Chlor Impaired	Diaz Impaired
1	Moro Cojo Slough	CCWQP/306MOR	5	0	0.0	5	0	0.0		
1	Moss Landing Harbor	CCOWs/MOS-SAN	18	18	100.0	18	3	16.7	X	X
2	Old Salinas R. Estuary	CCWQP/309OLD	5	0	0.0	5	1	20.0		
		SWAMP_CAMP/309OLD	1	1	100.0	1	0	0.0		
		Site Total	6	1	16.7	6	1	16.7		
2	Old Salinas R. Estuary	CCOWs/OLS-POT	22	22	100.0	22	10	45.5		
		DPR/309POT_DPR	3	2	66.7	3	1	33.3		
		Site Total	25	24	96.0	25	11	44.0		
		Old Salinas R. Estuary Total	31	25	80.6	31	12	38.7	X	X
3	Salinas R. Lagoon North	CCOWs/SAL-MON	19	17	89.5	19	1	5.3		
		DPR/309SBR_DPR	3	0	0.0	3	0	0.0		
		Salinas R. Lagoon North Total	22	17	77.3	22	1	4.5	X	
4	Tembladero Slough	CCWQP/309TEH	8	2	25.0	8	3	37.5		
4	Tembladero Slough	SWAMP_CAMP/309TDW	1	1	100.0	1	0	0.0		
		Tembladero Slough Total	9	3	33.3	9	3	33.3	X	X
4	Merritt Ditch	CCWQP/309MER	5	0	0.0	5	1	20.0		
5	Alisal Slough	CCWQP/309ASB	5	0	0.0	5	2	40.0		X
6	Blanco Drain	CCWQP/309BLA	6	0	0.0	6	1	16.7		
		CCOWs/BLA-PUM	18	17	94.4	18	4	22.2		
		Site Total	24	17	70.8	24	5	20.8		
6	Blanco Drain	CCOWs/BLA-COO	23	22	95.7	22	7	31.8		
		DPR/309BLA-COO_DPR	16	1	6.3	16	6	37.5		
		Site Total	39	23	59.0	38	13	34.2		
		Blanco Drain Total	63	40	63.5	62	18	29.0	X	X
7a	Salinas Reclamation Canal (Lower)	CCWQP/309JON	6	1	16.7	6	5	83.3		
		CCOWs/REC_JON	24	24	100.0	24	22	91.7		
		DPR/309JON_DPR	3	3	100.0	3	2	66.7		
		Salinas Reclamation Canal (Lower) Total	33	28	84.8	33	29	87.9	X	X

[1] Correspond with Watershed ID's contained in Figure 2-1 (pg. 11).
[2] Chlorpyrifos guidance criteria of 0.025 µg/L.
[3] Diazinon guidance criteria of 0.160 µg/L.

Table 3-10 (cont'd).

Watershed ID [1]	Waterbody	Program/Site Code	# Chlorpyrifos samples	# Chlorpyrifos Exceedances [2]	% Chlorpyrifos Exceedances	# Diazinon Samples	# Diazinon Exceedances [3]	% Diazinon Exceedances	Chlor Impaired	Diaz Impaired
7b	Salinas Reclamation Canal (Upper)	CCWQP/309ALG	8	3	37.5	8	8	100.0		
7b	Salinas Reclamation Canal (Upper)	DPR/309REC-DLT_DPR	16	1	6.3	16	16	100.0		
		Salinas Reclamation Canal (Upper) Total	24	4	16.7	24	24	100.0	X	X
8	Salinas River	CCWQP/309SSP	4	1	25.0	4	1	25.0		
8	Salinas River	CCWQP/309SAC	4	0	0.0	4	0	0.0		
8	Salinas River	CCOWs/SAL-DAV	22	20	90.9	22	6	27.3		
		DPR/309DAV_DPR	3	0	0.0	3	0	0.0		
		SWAMP_CAMP/309DAV	1	1	100.0	1	0	0.0		
		Site Total	26	21	80.8	26	6	23.1		
		Salinas River Total	34	22	64.7	34	7	20.6	X	X
9	Espinosa Slough	CCWQP/309ESP	6	1	16.7	6	5	83.3		
9	Espinosa Lake tributary	CCOWs/EP1-ROG	23	23	100.0	22	21	95.5		
9	Espinosa Lake	CCOWs/EPL-EPL	16	16	100.0	16	2	12.5		
		Espinosa Slough and Lake Total	45	40	88.9	44	28	63.6	X	X
10	Gabilan Creek	CCWQP/309GAB	Dry	Dry	Dry	Dry	Dry	Dry		
11	Natividad Creek	CCWQP/309NAD	5	1	20.0	5	2	40.0		X
12	Quail Creek	CCWQP/309QUI	6	6	100.0	6	6	100.0		
		DPR/309QUI_DPR	19	19	100.0	19	9	47.4		
		Quail Creek total	25	25	100.0	25	15	60.0	X	X
13	Chualar Creek	CCWQP/309CRR	1	1	100.0	1	0	0.0		
		DPR/309CRR_DPR	16	12	75.0	16	6	37.5		
		Chualar Creek Total	17	13	76.5	17	6	35.3	X	X

[1] Correspond with Watershed ID's contained in Figure 2-1 (pg. 11).
[2] Chlorpyrifos guidance criteria of 0.025 µg/L.
[3] Diazinon guidance criteria of 0.160 µg/L.

Table 3-11 contains a list of impaired waterbodies and the pollutant causing the impairment.

Table 3-11. Impaired waterbodies addressed in TMDL project [a].

Impaired waterbodies	Pollutant	
	Chlorpyrifos	Diazinon
Moss Landing Harbor, South [b]	X	X
Old Salinas River Estuary	X	X
Salinas River Lagoon (North)	X	
Tembladero Slough	X	X
Alisal Slough		X
Blanco Drain	X	X
Salinas Reclamation Canal, Lower [c]	X	X
Salinas Reclamation Canal, Upper/ Alisal Creek [d]	X	X
Salinas River [e]	X	X
Espinosa Slough [f]		X
Espinosa Lake [g]	X	X
Natividad Creek		X
Quail Creek	X	X
Chualar Creek	X	X
Total waterbody/pollutant combinations	11	13

[a] Includes entire waterbody segment except as noted.
[b] Moss Landing Harbor south of Sandholt Bridge to tidal gates at Potrero Rd.
[c] From confluence of Natividad Creek to confluence of Tembladero Slough.
[d] From confluence of Natividad Creek to confluence of Alisal Creek.
[e] From Salinas River Lagoon (North) to Gonzales Road.
[f] From confluence of Salinas Reclamation Canal (Lower) to Espinosa Lake.
[g] Espinosa Lake and all unnamed tributaries.

4 SOURCE ANALYSIS

4.1 Introduction

Chlorpyrifos and diazinon are man-made pesticides. The sources of chlorpyrifos and diazinon found in the Lower Salinas River watershed are agricultural and urban storm water. The following is a general discussion of the sources followed by more detailed sections that address the sources by pollutant type.

4.1.1 Agricultural Sources

Chlorpyrifos and diazinon are actively applied and can be found in the water column, suspended sediment in the water column, and the bottom sediments. Staff tracked agricultural application location and amount applied using the Pesticide Use Report (PUR) provided by the Department of Pesticide Regulation. Applications of currently registered pesticides are reported at the section, or square mile, level. The PUR allows for fairly accurate identification of sources in time and space.

4.1.2 Urban Storm Water Sources

The City of Salinas has a Phase 1 NPDES Municipal Stormwater Discharge permit. Urban uses and other non-agricultural uses of chlorpyrifos and diazinon can only be identified at the county-level using the PUR database. Staff inferred use levels and potential impacts to water quality from studies performed in other parts of the state for similar land uses. Non-agricultural use of chlorpyrifos and diazinon has been severely restricted in recent years, and it is anticipated that these non-agricultural sources have decreased and will continue to decrease in the future. The restrictions on use are discussed in more detail in the Implementation and Monitoring section.

4.2 Chlorpyrifos and Diazinon Use in the Salinas River Watershed

Chlorpyrifos and diazinon are actively applied within the Lower Salinas River watersheds. These pesticides can be found both in the water column (including suspended material), and in bottom sediments. The source analysis is based on 2002 and 2007 application data that was contained in the Pesticide Use Reports (PUR) provided by the Department of Pesticide Regulation (DPR).

4.2.1 Approach and Methods

Agriclutural source analysis for chlorpyrifos and diazinon was performed using PUR provided by the DPR. The analysis was confined to the Lower Salinas Valley because monitoring data indicate that the Salinas River upstream of Gonzales Road does not exceed the current numeric targets and/or does not cause toxicity.

Urban storm water contributions are estimated based on data from other urban areas within the state since specific data that segregates the urban contribution from the agricultural contribution is not available. The only urban area included in this analysis is the City of Salinas, since data suggest that there may be contributions from the City (Hunt, 2003).

4.2.1.1 <u>Agricultural Sources</u>

The PUR data for agricultural pesticide use is reported at the section (square mile) level in pounds of chemical applied. Staff used GIS to assign sections, and portions of sections, to specific watersheds. This allowed the application data to be summed at the watershed level.

Where watershed boundaries cross a section, the amount of the chemical applied is apportioned based on the ratio of the area of the section lying within a watershed divided by the original area of the section. For example, if 100 lbs of diazinon was applied to a section, and half of that section lies in the Quail Creek watershed, then 50 lbs (100 lbs x 0.50 = 50 lbs) of diazinon would be apportioned to the Quail Creek watershed.

CSUMB (CCoWS, 2004) estimated pesticide runoff ratios (PRR's) using the amount of pesticides applied within each watershed that was later compaired to pesticide loads in waterways during low flow conditions. CSUMB concluded that the total summer low-flow load represents approximately 0.01% (1 lb in 10,000 lbs) of the amount of chlorpyrifos and diazinon applied. The low-flow load consists mostly of the pesticide in the water column, while a small percentage of the load is in the form of the chemical attached to the suspended sediment.

Table 4-1 displays the results of the CCoWS watershed level analysis for the 2002 agricultural application data for diazinon and chlorpyrifos and also provides an estimate of pesticides that reach the waterbodies. Figure 4-1 and Figure 4-2 display the 2002 agricultural application data graphically by subwatershed.

Table 4-1. 2002 Agricultural Diazinon and Chlorpyrifos Use by Watershed (CCoWs, 2004).

WS Number [a]	Watershed	Watershed Area (Acres)	Diazinon			Chlorpyrifos		
			lbs Active Ingredient applied	Lbs/acre	Estimated amount reaching waterbodies (lbs)[b]	lbs Active Ingredient applied	Lbs/acre	Estimated amount reaching waterbodies (lbs)[b]
3b	Moss Landing Harbor, South	274	37	0.14	0.0037	3	0.01	0.0003
4	Old Salinas River Estuary	1,463	274	0.19	0.0274	30	0.02	0.003
5	Tembladero Slough	16,737	3,044	0.18	0.3044	530	0.03	0.053
6a	Salinas Reclamation Canal, Lower	6,563	5,138	0.78	0.5138	911	0.14	0.0911
6b	Salinas Reclamation Canal, Upper/Alisal Creek	29,662	8,706	0.29	0.8706	2,431	0.08	0.2431
7	Espinosa Slough	8,646	6,811	0.79	0.6811	940	0.11	0.094
8	Salinas River Lagoon, North	3,058	2,033	0.66	0.2033	485	0.16	0.0485
9	Salinas River	40,595	23,999	0.59	2.3999	12,263	0.30	1.2263
10	Blanco Drain	8,300	9,015	1.09	0.9015	2,866	0.35	0.2866
11	Alisal Slough Remnant (Rec Canal)	3,703	3,544	0.96	0.3544	914	0.25	0.0914
12	Gabilan Creek	27,713	1,510	0.05	0.151	361	0.01	0.0361
13	Natividad Creek	7,405	404	0.05	0.0404	35	0.00	0.0035
14	Quail Creek	11,278	1,974	0.18	0.1974	2,216	0.20	0.2216
15	Chualar Creek	29,888	6,870	0.23	0.687	5,326	0.18	0.5326

[a] Note that watershed numbers (WS) correspond to numbering scheme developed by CCoWs as represented in Figures 4-1 and 4-2.

[b] Estimated amount based on CSUMB low flow pesticide runoff ratio of 0.01%.

Blanco Drain received the greatest rate of both diazinon application (1 lb/acre) and chlorpyrifos application (0.35 lbs/acre). This may be expected because the Blanco Drain watershed is comprised of 93% agricultural land use. In general, higher diazinon and chlorpyrifos application rates coincide with watersheds that are dominated by irrigated agricultural land use.

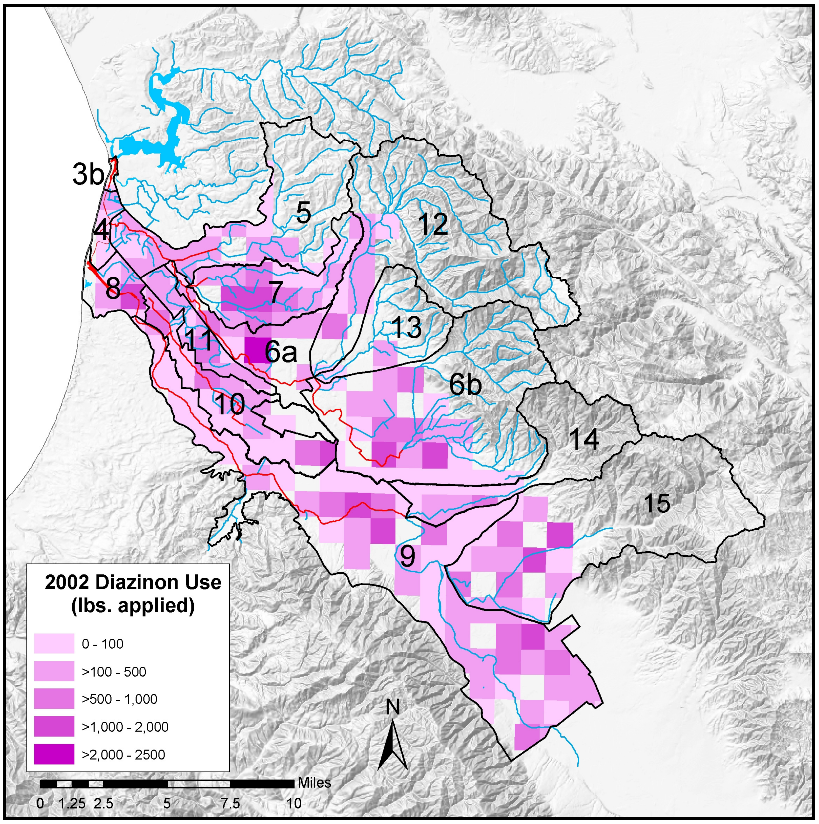


Figure 4-1. 2002 Agricultural Diazinon Use

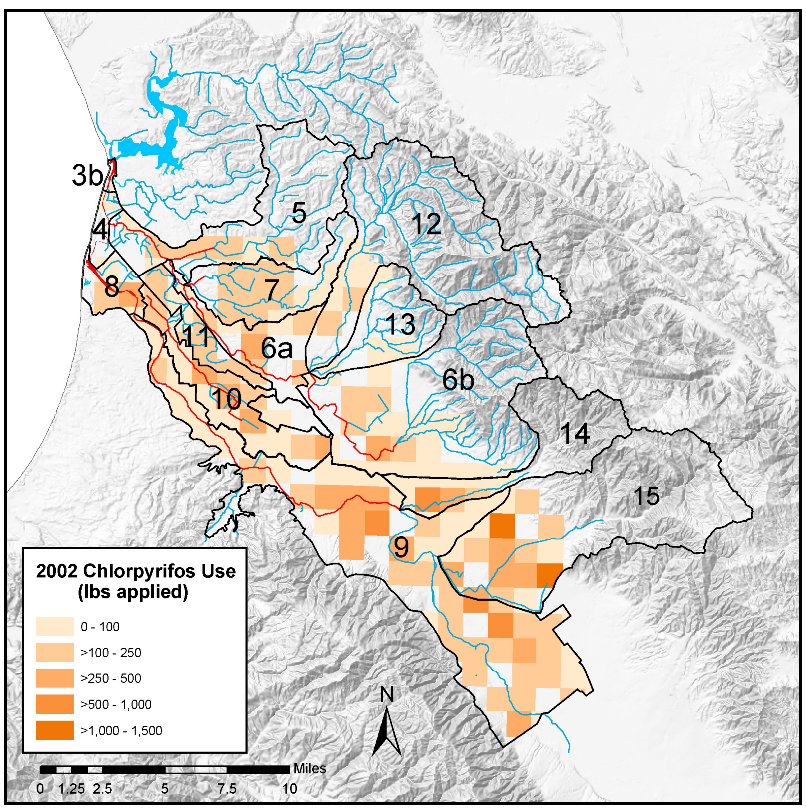


Figure 4-2. 2002 Agricultural Chlorpyrifos Use.

Staff performed additional analysis using the most current DPR data (2007) to evaluate potential changes in pesticide use patterns throughout the study area. Figure 4-3 and 4-4 represent 2007 agricultural use of diazinon and chlorpyrifos, respectively. The distribution of chlorpyrifos and diazinon application appears consistent between the 2002 and 2007 periods.

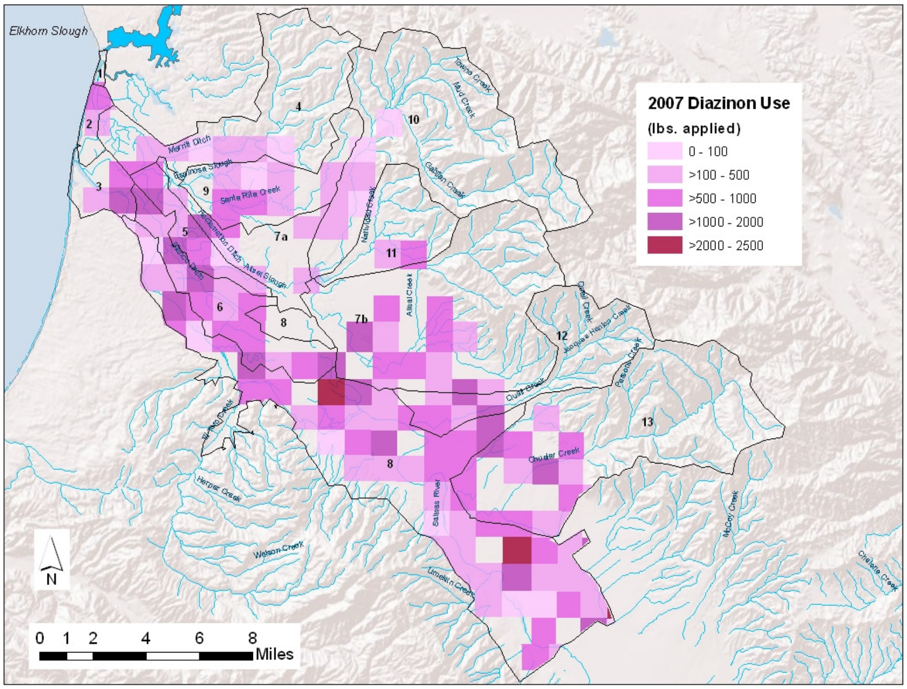


Figure 4-3. 2007 Agricultural Diazinon Use.

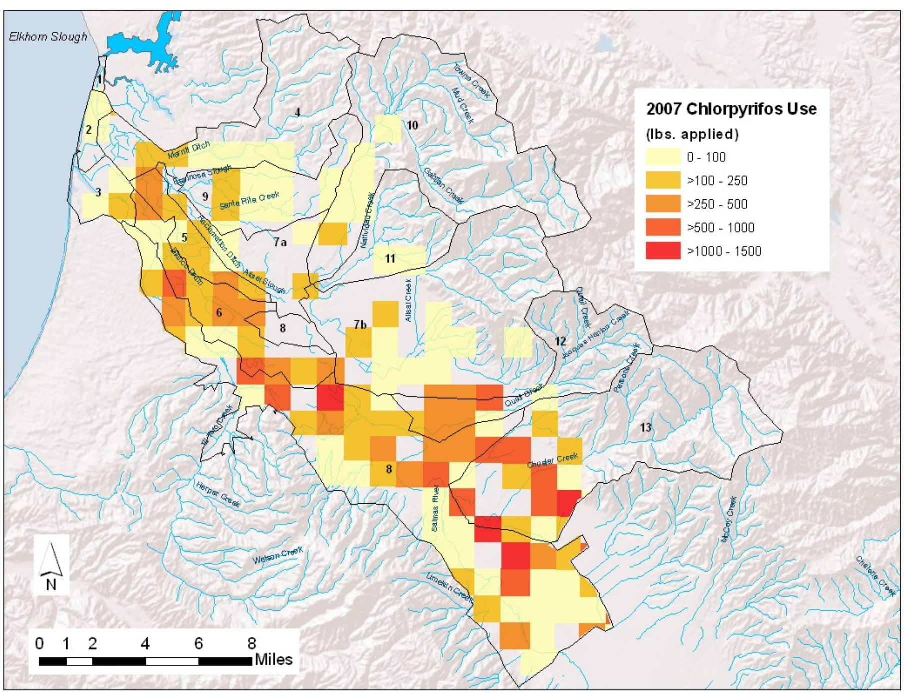


Figure 4-4. 2007 Agricultural Chlorpyrifos Use.

The Department of Pesticide Regulation has tracked pesticide use in the Salinas River watershed since 1990. Annual amounts of chlorpyrifos and diazinon used in the Salinas River watershed (Hydrologic Unit 309) are shown in Figure 4-5. As can be seen in the figure, diazinon use has almost tripled between 1997 and 2004. Use of chlorpyrifos has been on a general decline since 1993, about 33% less than the peak use in 1993.

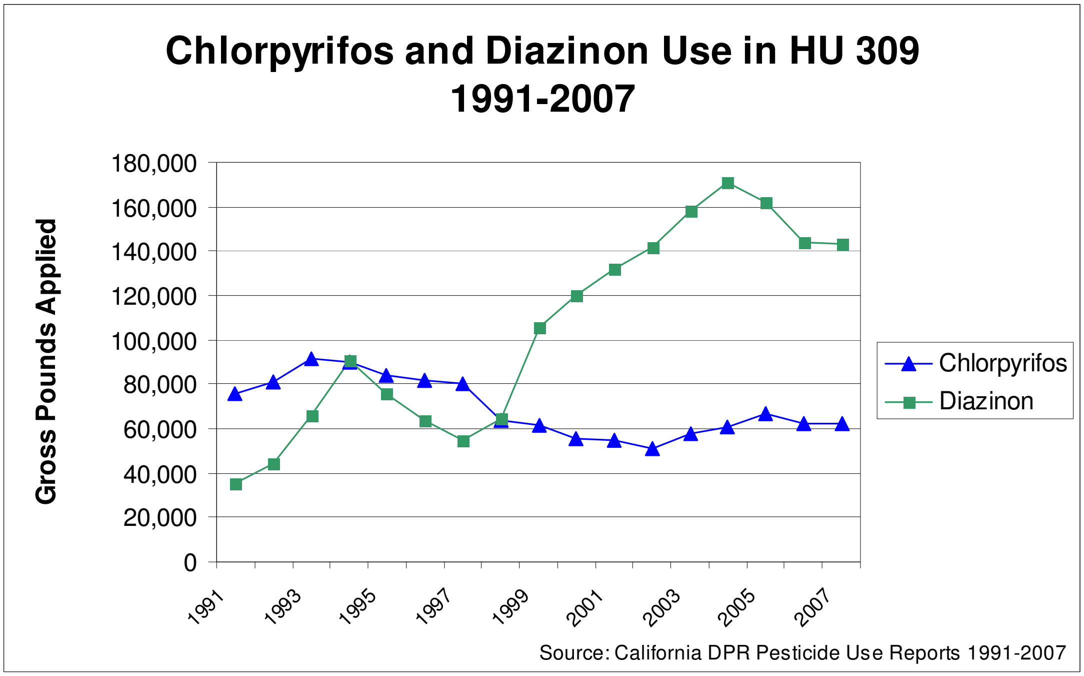


Figure 4-5. Annual Chlorpyrifos and Diazinon Use in HU 309

Figure 4-6 (next page) shows Monterey County monthly chlorpyrifos usage information for the period 2002 to 2006. Seasonal use is a function of the patterns associated with the crops to which the pesticide is applied. In 2002, the crops with the heaviest use of chlorpyrifos were broccoli, cauliflower, and wine grapes. The February peak is associated with heavy applications on wine grapes and broccoli. Another peak is observed in July driven by use on broccoli.

Figure 4-7 shows the monthly usage of diazinon in Monterey County for the period 2002 to 2006. In 2002, the heaviest use of diazinon was head lettuce, leaf lettuce, and spinach. The use of diazinon on head lettuce peaks in July and use on leaf lettuce peaks in August.

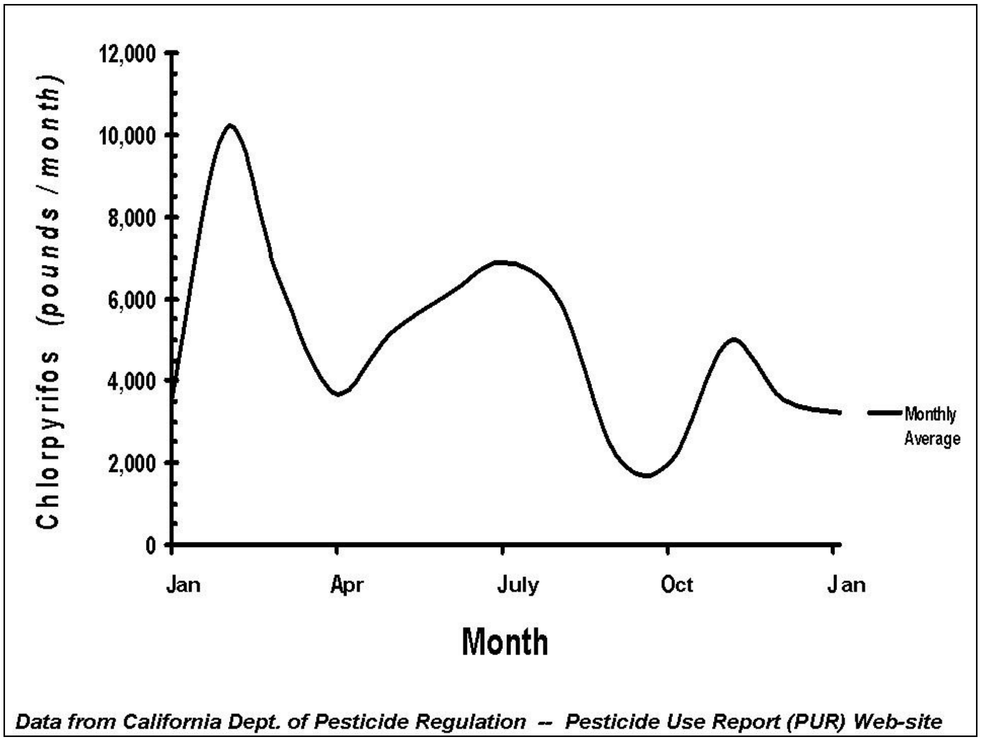


Figure 4-6 Chlorpyrifos monthly use patterns in Monterey County – 2002 to 2006.

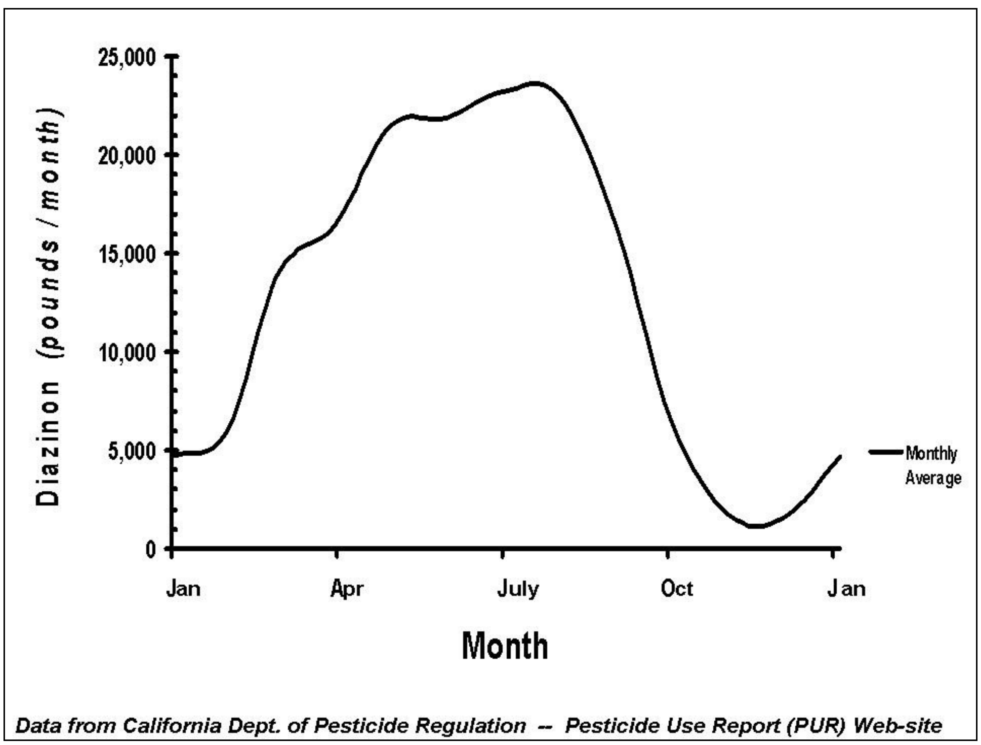


Figure 4-7. Diazinon monthly use patterns in Monterey County – 2002 to 2006

In 2007, the crops with the heaviest use of chlorpyrifos were broccoli, wine grapes, and cauliflower (see Table 4-2). The crops with the heaviest use of diazinon were head lettuce, leaf lettuce, and spinach (see Table 4-3).

Table 4-2. 2007 Chlorpyrifos Use on Crops

Crop	Gross lbs applied	Percent of total
Broccoli	30,518	49%
Wine Grapes	18,394	30%
Cauliflower	8,196	13%
Brussel Sprouts	1,543	3%
All others	3,358	5%
All crops	61,984	100%

Table 4-3. 2002 Diazinon Use on Crops

Crop	Gross lbs applied	Percent of total
Leaf Lettuce	63,647	44%
Head Lettuce	52,357	37%
Spinach	8,352	7%
Broccoli	7,068	5%
Cauliflower	4,528	3%
All others	7,482	5%
All crops	143,434	100%

4.2.1.2 Urban Storm Water: City of Salinas

The various uses of diazinon and chlorpyrifos in an urban setting include landscape applications and structural pest control (termites). Both pesticides may be transported to surface water via urban storm water conveyance systems. Urban uses of these compounds have become more restricted as the EPA has canceled or restricted many uses due to concerns for human health. Any estimate of the amount of diazinon and chlorpyrifos that is attributable to non-agricultural uses within the City will, of necessity, be very approximate because much of the data that has been used to generate estimates of the urban contribution to surface waters were collected prior to the implementation of the EPA's cancellations.

Reported uses of diazinon and chlorpyrifos in 2004 for Monterey County/Salinas Watershed were obtained from the California Department of Pesticide Regulation pesticide use reporting website. Reported uses for 2004 are contained in **Error! Reference source not found.**. Categories of reported pesticide use include agricultural applications, structural pest control applications, landscape maintenance applications, and right of way applications.

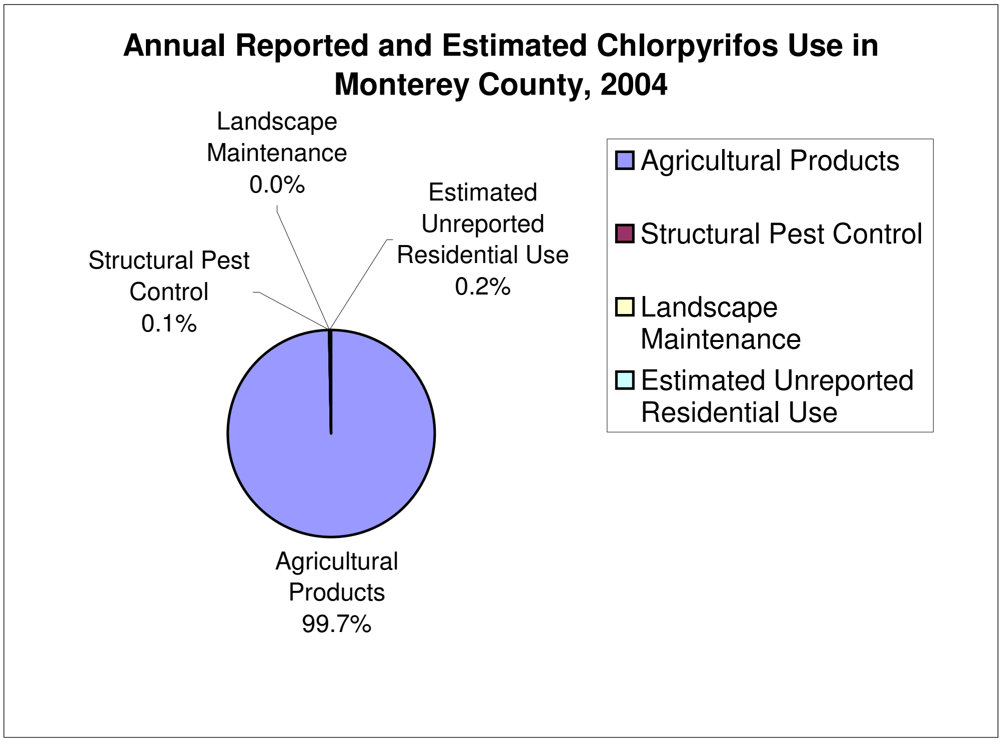
Unreported diazinon and chlorpyrifos urban uses in Monterey County were estimated based on diazinon and chlorpyrifos sales and use information determined in the Survey of Residential Pesticide Use and Sales in Orange County, California (Wilen, 2001). In the Orange County study, Wilen estimated that the total pounds of active ingredient of products containing chlorpyrifos and diazinon to be 710 and 10,103 respectively. The estimated unreported residential uses for Monterey County was found by multiplying the ratio of the Monterey County to Orange County 2000 (estimated) populations by the estimated unreported urban use for Orange County found by Wilen. This is the same methodology for estimating unreported residential use of pesticides used in the TMDL for Diazinon and Chlorpyrifos in Sacramento County Urban Creeks (CVRWQCB, 2004).

Using this approach, staff estimated that 0.2% (99 pound) of chlorpyrifos active ingredient use, and 1.4% (1,414 pounds) of diazinon active ingredient use in Monterey County can be attributed to unreported residential applications. Figure 4-8 depicts the comparison between estimated unreported residential and reported chlorpyrifos and diazinon applications in Monterey County for 2000. These data demonstrate that virtually all (98 to 99.7%) applications of chlorpyrifos and diazinon in Monterey County can be attributed to agricultural applications, with only small, nominal amounts attributable to structural, landscape maintenance, and (estimated) unreported residential urban applications.

In contrast, the TMDL for Diazinon and Chlorpyrifos in Sacramento County Urban Creeks (CVRWQCB, 2004) indicates ratios of 54% (diazinon) and 26% (chlorpyrifos) usage attributable to urban and residential sources, relative to agricultural applications. This demonstrates greater residential, structural, and landscaping applications in a more urbanized watershed.

Table 4-4. 2004 Non-Agricultural Reported Pesticide Use in Monterey County

Application	(lbs. active ingredient applied)	
	Chlorpyrifos	Diazinon
Landscape Maintenance	1.4	367
Research Commodity	15	0
Rights of Way	0.5	5
Structural Pest Control	37	208
Uncultivated, non-Ag Areas		
Totals	54	580



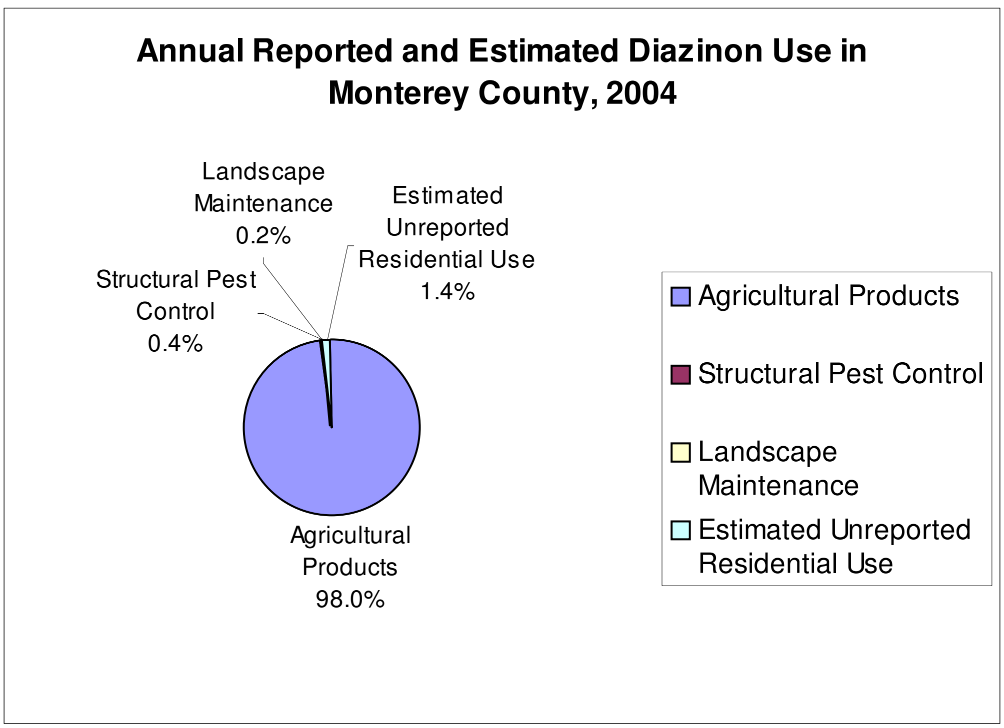


Figure 4-8. Annual Reported and Estimated Chlorpyrifos and Diazinon Use in Monterey County, 2004.

Since 2001, when EPA began to phase out chlorpyrifos and diazinon, OP pesticide TMDLs have been developed for urban areas in California. These TMDL projects have highlighted the difficulty in developing urban source load estimates, particularly in light of new restrictions regarding their use. One of these TMDLs, developed for urban creeks in Sacramento County, includes Arcade Creek where water column diazinon and chlorpyrifos have been monitored since 1996. Figure 4-9 depicts observed trends using data from the Sacramento urban creeks TMDL. The trend indicates a reduction in instream concentrations since the phase-out period began in 2001.

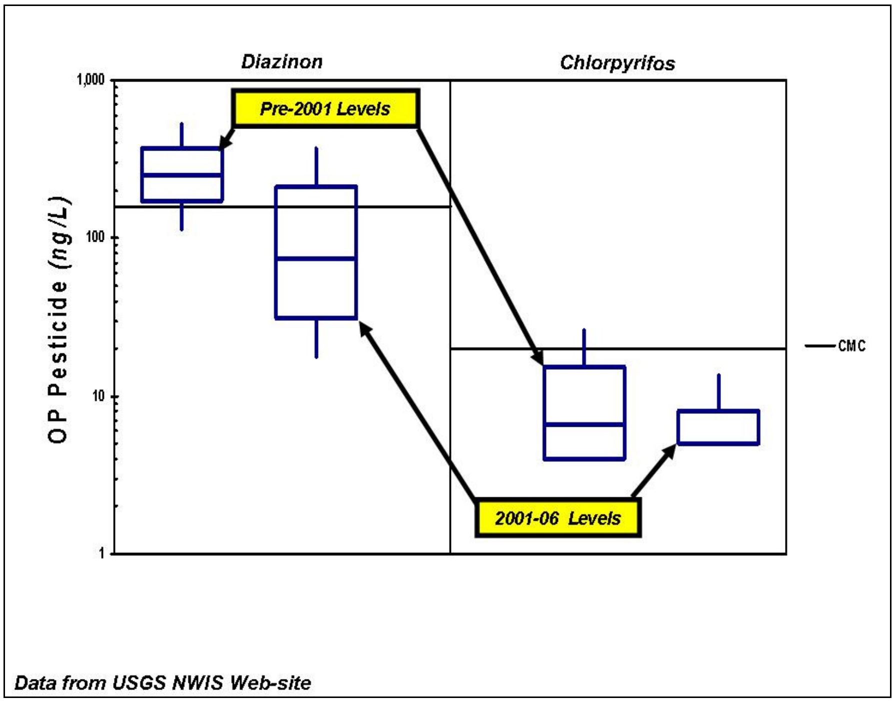


Figure 4-9. Diazinon and chlorpyrifos trends in Arcade Creek, Sacramento Urban Area.

Note: Units in nanograms per liter (ng/L). Levels compared to criterion maximum concentrations (CMC) of 160 ng/L diazinon and 20 ng/l chlorpyrifos.

Staff also assessed other potential urban storm water sources of chlorpyrifos and diazinon that may be transported into receiving waters. These other potential urban storm water sources are industrial facilities that provide agricultural products such as fertilizer and pesticide products as well as crop and field application services. These facilities would potentially store, transport, and apply pesticides within the Lower Salinas River watershed.

Staff identified three agriculture service facilities in the Lower Salinas River watershed that operate under Waste Discharge Requirements (WDR's) issued by the Water Board. These facilities provide fertilizer and pesticide products and application services to agricultural producers. Table 4-5 lists these facilities.

Table 4-5. Agriculture Service Facilities with Waste Discharge Requirements (WDRs)

Name	Address	WDR Order No.
Soilserv Inc	1427 Abbott St., Salinas	01-051
Western Farm Service , Inc	1127, 1143, 1151 Terren Ave., Salinas	00-30
NH3 Service Company	945 Johnson Ave., Salinas	R3-2002-0039

Soilserv Inc is located approximately 0.75 miles west of the Salinas Reclamation Canal. Staff issued a notice of violation following an inspection on March 10, 2007. The inspection report cited poor management of facility waste water systems and discharges to the Salinas Reclamation Canal via City of Salinas storm drains. Staff concluded that this facility has discharged pesticides to the Salinas Reclamation Canal; however, the facility has since taken appropriate corrective action to cease storm water discharges as required by Water Board staff and the City of Salinas.

Western Farm Service has discharged pesticides and un-ionized ammonia into the Salinas Reclamation Canal. On March 7, 2007, stormwater monitoring staff from City of Salinas inspected the facility storm drains and observed and sampled water flowing from the facility storm drain. These storm drains are connected to and flow into the Salinas Reclamation Canal. Chemical analysis of the water samples indicated elevated concentrations of the pesticides diazinon, chlorpyrifos, and dimethoate, as well as un-ionized ammonia. On March 21, 2007, Water Board conducted compliance inspections and found several violations. On August 13, 2007, the Water Board issued a Notice of Violation to the Discharger for the alleged violations. Among the alleged violations were: inadequate storage of pesticides and fertilizers; inadequate secondary containment or hazardous materials; inadequate staff training on operation of facility underground sump valves; improper storm drain connections between pesticide and fertilizer storage and handling areas and surface waters; improper rinsing of pesticide and fertilizer containers to facility drains discharging to surface waters; and failure to clean up dry fertilizer product covering a dock area before a rain event. Staff concluded that this facility has discharged pesticides to the Salinas Reclamation Canal; however, the facility has completed the necessary corrective actions to cease storm water discharges under the direction of Water Board staff and the City of Salinas.

NH3 Service Company is approximately 0.4 miles west of the Salinas Reclamation Canal. Past management practices discharged nitrogen fertilizer into site soil and groundwater. The Water Board issued a cleanup and abatement order in 1992 requiring the facility to treat nitrate contaminated groundwater. On March 15, 2007, staff conducted an inspection of the facility and found no violations. Staff concluded that the facility does not discharge pesticides or toxic substances into the Salinas Reclamation Canal.

Staff has concluded that these agricultural service facilities are currently in compliance with their respective waste discharge requirements and that they are not discharging chlorpyrifos and/or diazinon into receiving waters via storm water runoff. Staff will continue to work with City of Salinas storm water staff to identify and eliminate pesticide discharges from urban storm water sources.

4.2.2 Natural Background Sources

USEPA requires states to assign an allocation to natural background sources of pollutant stressors and identification of sources of the pollutants for which allocations are assigned.

USEPA describes background levels as representing pollutant loading from natural geomorphological processes, e.g. weathering.

Staff concluded that diazinon and chlorpyrifos are not natural pollutants, therefore background levels of these pesticides would not be expected in absence of their use. Because natural background sources of these chemicals do not exist, staff has assigned an alloction to background equal to zero.

4.3 Conclusions from Source Analysis

Staff concludes that that significant sources of chlorpyrifos and diazinon causing exceedance of water quality objectives are:

1. Discharges from agricultural lands, and
2. Discharges from urban storm water.

Staff concluded that agricultural lands contribute 98% of the load while storm water contributes 2%.

The EPA has canceled many of the non-agricultural uses of chlorpyrifos and diazinon and staff anticipates that future urban uses of these pesticides will be greatly reduced due to these cancellations.

5 NUMERIC TARGETS

This section describes the numeric targets selected for the impaired waterbodies. These targets are designed to protect the beneficial uses of these waterbodies. Since narrative water quality objectives exist to protect beneficial uses (see Section 1.3), staff developed numeric targets that interpret or translate the narrative objectives.

5.1 Water Column Numeric Targets

Staff reviewed various criteria/screening values that could be used as numeric target values. Staff selected water column numeric target values for chlorpyrifos and diazinon as a direct measure of water quality conditions for the protection of aquatic life that are consistent with the toxicity and pesticide objectives described in Section 1.3.

Staff used water column numeric target values that were derived from the California Department of Fish and Game's (CDFG) *Water Quality Criteria for Diazinon and Chlorpyrifos* (Siepmann and Finlayson, 2000) and later modified based on information provided by staff of the Central Valley Regional Water Qualtiy Control Board. A description of this modification is contained in the following paragraphs.

For the diazinon section of the CDFG criteria, forty acceptable acute toxicity values were available to calculate freshwater criteria. Acceptable acute toxicity tests were available for nine invertebrate and nine fish species. Five acute to chronic ratios for four species were available to calculate a chronic criterion for diazinon. CDFG calculated an acute criterion for diazinon of 80 nanograms per liter (ng/L) and a chronic criterion of 50 ng/L.

Following development of the CDFG diazinon criteria (Siepmann and Finlayson, 2000), the manufacturer of diazinon (Makhteshim Agan of North America, Inc. or MANA) provided new information showing that the results from one of the toxicity tests used to derive the CDFG diazinon criteria were reported incorrectly. The toxicity test in question used the species *Gammarus fasciatus,* which had the lowest acceptable acute toxicity test result identified by CDFG or U.S. EPA. The toxicity test data sheets MANA provided came from the microfiche archives of the USGS laboratory that conducted the toxicity tests. The USGS researcher who obtained the data sheets concluded that the toxicity value for *Gammarus fasciatus* was an order of magnitude higher than originally reported. However, Central Valley Water Board staff and the CDFG concluded that it was impossible to discern the correct toxicity test results for the questionable *Gammarus fasciatus* study from the toxicity test data sheets.

CDFG recalculated the diazinon criteria to exclude the questionable toxicity test values for *Gammarus fasciatus*, but has also noted that the recalculation assumes no new information has been collected that would affect the criteria. CDFG believed that it was impossible to discern the correct toxicity test results for the questionable *Gammarus fasciatus* study. The data set that CDFG used in recalculating the diazinon criteria also did not include the toxicity values for *Gammarus pseudolimnaeus* test that U.S. EPA used in their criteria. CDFG found the *Gammarus pseudolimnaeus* study used by U.S. EPA unacceptable for use in calculating water quality criteria because it did not meet American Society for Testing and Materials (ASTM) standards for acute toxicity tests. The recalculated CDFG values are an acute criterion for diazinon of 160 ng/L and a chronic criterion of 100 ng/L. Central Valley Water Board staff confirmed these recalculated values.

For the chlorpyrifos section of the CDFG criteria derivation (Siepmann and Finlayson, 2000) forty-three acceptable acute toxicity values were available to calculate freshwater criteria. Acceptable acute toxicity tests were available for thirteen invertebrate and seven fish species. Eight acute to chronic ratios for seven species (both freshwater and saltwater) were available to calculate a chronic criterion for chlorpyrifos. CDFG calculated an acute criterion for chlorpyrifos of 20 ng/L and a chronic freshwater criterion of 14 ng/L. The calculations that are part of the U.S. EPA methodology (EPA, 1985) can include interim calculations before the final criterion is calculated. The U.S. EPA methodology states that interim calculations should be rounded to four significant figures and the final criterion should be rounded to two significant figures. When the freshwater chlorpyrifos criteria are rounded to two significant figures using the data set that CDFG found acceptable, the acute criterion is 25 ng/L, rather than 20 ng/L, and the chronic criterion is 15 ng/L, rather than 14ng/L.

Water column numeric targets are presented in Table 5-1.

Table 5-1. Water Column Numeric Targets

Compound	CMC [A] (ppb)	CCC [B] (ppb)
Chlorpyrifos [C]	0.025	0.015
Diazinon [C]	0.16	0.10

[A]. CMC – Criterion Maximum Concentration (1- hour average). Not to be exceeded more than once in a three year period

[B]. CCC – Criterion Continuous Concentration (4-day (96-hour) average). Not to be exceeded more than once in a three year period

[C]. A toxicity ratio is used to account for the additive nature of these compounds. The ratio calculation is provided in this section.

5.2 Additive Toxicity Numeric Target

Diazinon and chlorpyrifos have the same mechanism of toxic action, and have been shown to exhibit additive toxicity to aquatic invertebrates when they co-occur (Bailey et al., 1997; Siepmann and Finlayson, 2000). Studies of mixtures of compounds acting through the same mechanism suggest there is no concentration below which a compound will no longer contribute to the overall toxicity of the mixture (Deneer et al., 1988). Therefore, the total potential toxicity of co-occurring diazinon and chlorpyrifos needs to be assessed, even when one or both of their individual concentrations would otherwise be below thresholds of concern. Technical guidance developed by staff of the Central Valley Regional Water Quality Control Board (CVRWQCB) ("Policy for Application of Water Quality Objectives" and policy on "Pesticide Discharges from Nonpoint Sources") include formulas for addressing additive toxicity. Additive toxicity can be evaluated by the following formula from Basin Plan Amendments to the Water Quality Control Plan for the Sacramento River and San Joaquin River Basins for Diazinon and Chlorpyrifos Runoff into the Sacramento and Feather Rivers (CVRWQCB, 2007):

$$\frac{C_{Diazinon}}{NT_{Diazinon}} + \frac{C_{Chlorpyrifos}}{NT_{Chlorpyrifos}} = S; \; S \leq 1$$

Where:

C = the concentration of a pesticide measured in the receiving water.

NT = the numeric target for each pesticide present.

S = the sum; a sum exceeding one (1.0) indicates that beneficial uses may be adversely affected.

The diazinon and chlorpyrifos additive toxicity numeric targets would be applied to the above formula when both diazinon and chlorpyrifos are present in the water column.

6 LINKAGE ANALYSIS

The goal of the linkage analysis is to establish a link between pollutant loads and water quality. This, in turn, supports that the loading capacity specified in the TMDLs will result in attaining the numeric target. For these TMDLs, this link is established because the numeric target concentrations are the same as the TMDLs, expressed as a concentration. Sources of chlorpyrifos and diazinon that lead to waterbody impairment have been identified. Therefore, reductions in chlorpyrifos and/or diazinon loading from these sources should result in a reduction of water column concentrations. The numeric targets are protective of aquatic life beneficial uses; hence the TMDLs define appropriate water quality conditions.

7 TOTAL MAXIMUM DAILY LOAD AND ALLOCATIONS

This TMDL is designed to address impairments due to chlorpyrifos and diazinon on fourteen water quality-limited segments located in the Lower Salinas River watershed. Section 303(d)(1)(C) of the Federal Clean Water Act requires that TMDLs must be "… established at a level necessary to implement the applicable water quality standards with seasonal variations and a margin of safety which takes into account any lack of knowledge concerning the relationship between effluent limitations and water quality."

Federal regulations provide further definition regarding the structure and content of Total Maximum Daily Loads. TMDLs are defined as the sum of the individual waste load allocations (WLAs), load allocations (LAs), and the margin of safety. TMDLs can be expressed in terms of "… mass per time, toxicity, or other appropriate measure" [40 CFR §130.2(i)]. WLAs are the portion of the receiving water's loading capacity allocated to existing or future point sources [40 CFR §130.2(h)]. LAs are the portion of the receiving water's loading capacity allocated to existing or future nonpoint sources or to natural background sources [40 CFR §130.2(g)]. Although the term "load" often refers to "mass", the federal regulations do not restrict the expression of a TMDL to units of mass. In this section, the discussion of load allocations, waste load allocations, and loading capacity include consideration of mass per time or other appropriate measures (e.g. concentration or toxic unit calculations).

Under the current regulatory framework for development of TMDLs, calculation of the loading capacity for impaired segments identified on the §303(d) list is an important step. EPA's regulation defines loading capacity as "the greatest amount of loading that a water can receive without violating water quality standards." The loading capacity provides a reference, which helps guide pollutant reduction efforts needed to bring water quality conditions into compliance with standards.

7.1 Loading Capacity

The loading capacity for water body segments in the Lower Salinas River watershed is the amount of chlorpyrifos or diazinon that can be assimilated without exceeding the water quality objectives, i.e., when either occurs without the presence of the other. In addition, because diazinon and chlorpyrifos can both be present at the same time at levels of concern, additive toxicity must also be included in the loading capacity. Therefore, the loading capacity is defined under these two scenarios.

The loading capacity, or Total Maximum Daily Load, for chlorpyrifos and diazinon, when either is present individually, meaning in the absence of each other, is applicable to each day of all seasons as indicated in Table 7-1.

Table 7-1. TMDL for diazinon and chlorpyrifos when present individually.

Impaired Waterbodies[a] Assigned TMDLs	TMDL			
	Chlorpyrifos		Diazinon	
	CMC[A] (ppb)	CCC[B] (ppb)	CMC[A] (ppb)	CCC[B] (ppb)
Moss Landing Harbor, South [b]	0.025	0.015	0.16	0.10
Old Salinas River Estuary	0.025	0.015	0.16	0.10
Salinas River Lagoon (North)	0.025	0.015	0.16	0.10
Tembladero Slough	0.025	0.015	0.16	0.10
Alisal Slough	0.025	0.015	0.16	0.10
Blanco Drain	0.025	0.015	0.16	0.10
Salinas Reclamation Canal, Lower [c]	0.025	0.015	0.16	0.10
Salinas Reclamation Canal, Upper/ Alisal Creek [d]	0.025	0.015	0.16	0.10
Salinas River [e]	0.025	0.015	0.16	0.10
Espinosa Slough [f]	0.025	0.015	0.16	0.10
Espinosa Lake [g]	0.025	0.015	0.16	0.10
Natividad Creek	0.025	0.015	0.16	0.10
Quail Creek	0.025	0.015	0.16	0.10
Chualar Creek	0.025	0.015	0.16	0.10

[A]. CMC – Criterion Maximum Concentration (1- hour average). Not to be exceeded more than once in a three year period

[B]. CCC – Criterion Continuous Concentration (4-day (96-hour) average). Not to be exceeded more than once in a three year period

[a] Includes entire waterbody segment except as noted.
[b] Moss Landing Harbor south of Sandholt Bridge to tidal gates at Potrero Rd.
[c] From confluence of Natividad Creek to confluence of Tembladero Slough.
[d] From confluence of Natividad Creek to confluence of Alisal Creek
[e] From Salinas River Lagoon (North) to Gonzales Road.
[f] From confluence of Salinas Reclamation Canal (Lower) to Espinosa Lake.
[g] Espinosa Lake and all unnamed tributaries.

Because diazinon and chlorpyrifos can and do co-occur in the impaired waters of the Lower Salinas River watershed, the additive (joint) toxicity of these chemicals must be addressed.

To address the additive toxicity of these compounds, the following is the loading capacity in terms of additive toxicity: loading capacity for waters of the Lower Salinas River watershed shall not exceed the sum (S) of one (1) as defined in Table 7-2 below.

The loading capacity, or Total Maximum Daily Load, for chlorpyrifos and diazinon, when present at the same time, is equal to or less than 1, as described in the following:

Table 7-2. Loading capacity for additive toxicity of diazinon and chlorpyrifos when both are present.

Impaired waterbodies[a]	TMDL for chlorpyrifos and diazinon when both present
Moss Landing Harbor, South [b]	$S \leq 1.0$[1]
Old Salinas River Estuary	
Salinas River Lagoon (North)	
Tembladero Slough	
Alisal Slough	
Blanco Drain	
Salinas Reclamation Canal, Lower [c]	
Salinas Reclamation Canal, Upper/ Alisal Creek [d]	
Salinas River [e]	
Espinosa Slough [f]	
Espinosa Lake [g]	
Natividad Creek	
Quail Creek	
Chualar Creek	

1: $$S = \frac{C_D}{NT_D} + \frac{C_C}{NT_C}$$

Where:
C_D = diazinon concentration in waterbody
C_C = chlorpyrifos concentration in waterbody
NT_D =Criterion Continuous Concentration (0.10 µg/L) or Criterion Maximum Concentration (0.16 µg/L) diazinon loading capacity.
NT_C =Criterion Continuous Concentration (0.015 µg/L) or Criterion Maximum Concentration (0.025 µg/L) chlorpyrifos loading capacity.

[a] Includes entire waterbody segment except as noted.
[b] Moss Landing Harbor south of Sandholt Bridge to tidal gates at Potrero Rd.
[c] From confluence of Natividad Creek to confluence of Tembladero Slough.
[d] From confluence of Natividad Creek to confluence of Alisal Creek
[e] From Salinas River Lagoon (North) to Gonzales Road.
[f] From confluence of Salinas Reclamation Canal (Lower) to Espinosa Lake.
[g] Espinosa Lake and all unnamed tributaries.

The additive toxicity loading capacity is consistent with the narrative toxicity water quality objective, which states in part *"All waters shall be maintained free of toxic substances in concentrations which are toxic to, or which produce detrimental physiological responses in human, plant, animal, or aquatic life."* This loading capacity is also consistent with the narrative pesticide objective, which states in part *"No* *individual pesticide or combination of pesticides shall reach concentrations that adversely affect beneficial uses"*.

7.2 Load Allocations

Table 7-3 shows wasteload and load allocations to responsible parties associated with the waterbodies and sources of chlorpyrifos and diazinon identified. All the allocations are equal to the TMDLs, which are expressed as receiving water concentrations. As noted previously, staff proposes to implement a concentration-based TMDL.

All responsible parties for sources of chlorpyrifos and diazinon to the Lower Salinas River watershed will be accountable to attain these allocations.

Table 7-3. Wasteload and Load Allocations

WASTE LOAD ALLOCATIONS		
Waterbody	**Party Responsible for Allocation (Source) NPDES/WDR number**	**Receiving Water**
Salinas Reclamation Canal[1], Natividad Creek[2], Lower Salinas River[3]	City of Salinas (Storm drain discharges required to be covered by an NPDES permit) Storm Water Permit NPDES No. CA00049981	Allocation-1 Allocation-2
LOAD ALLOCATIONS		
Waterbody	**Responsible Party (Source)**	**Receiving Water Fecal Coliform (MPN/100mL)**
All fourteen impaired water bodies[a]	Owners/operators of irrigated agricultural land	Allocation-1 Allocation-2

Allocation 1: For diazinon and chlorpyrifos when present individually.

Compound	CMC [A] (ppb)	CCC [B] (ppb)
Chlorpyrifos [C]	0.025	0.015
Diazinon [C]	0.16	0.10

[A]. CMC – Criterion Maximum Concentration (1- hour average). Not to be exceeded more than once in a three year period
[B]. CCC – Criterion Continuous Concentration (4-day (96-hour) average). Not to be exceeded more than once in a three year period.

Allocation 2 For additive toxicity of diazinon and chlorpyrifos when both are present.

$$S = \frac{C_D}{LC_D} + \frac{C_C}{LC_C}$$

Where:
C_D = diazinon concentration in waterbody
C_C = chlorpyrifos concentration in waterbody
LC_D =Criterion Continuous Concentration (0.10 µg/L) or Criterion Maximum Concentration (0.16 µg/L) diazinon loading capacity.
LC_C =Criterion Continuous Concentration (0.015 µg/L) or Criterion Maximum Concentration (0.025 µg/L) chlorpyrifos loading capacity.
Sum (S) greater than or equal to one (1) not to be exceeded more than once in a three year period.

[a] All fourteen impaired waterbodies as contained in Tables 7-1 and 7-2: Moss Landing Harbor (South), Old Salinas River Estuary, Salinas River Lagoon (North), Tembladero Slough, Alisal Slough, Blanco Drain, Salinas Reclamation Canal, Lower, Salinas Reclamation Canal, Upper/ Alisal Creek, Salinas River, Espinosa Slough, Espinosa Lake, Natividad Creek,' Quail Creek, Chualar Creek.

[1] Salinas Reclamation Canal: all reaches and tributaries, which includes from confluence with Tembladero Slough to upstream confluence with Alisal Creek.

[2] Natividad Creek : all reaches and its tributaries, which includes from the confluence with Carr Lake to the uppermost reach of the waterbody.

[3] Lower Salinas River[3]: all reaches and tributaries from Salinas River at Chualar River Road downstream to its confluence with the Salinas River Lagoon at Monte Road

The wasteload and load allocations for diazinon and chlorpyrifos are equivalent loading capacity listed in Table 7-1 and additive loading capacity described in Table 7-2. This method provides a very straightforward definition of the load allocations. There is no inherent error involved in the methodology, and no data gaps have to be filled.

Available samples collected within the applicable averaging period for the numeric targets will be used to determine compliance with the allocations and loading capacity. Prior to performing any averaging calculations, only chlorpyrifos and diazinon results from the same sample will be used in calculating the sum (S) indicated in Table 7-2. For purposes of calculating the sum (S), analytical results that are reported as "nondetectable" concentrations are considered to be zero.

Compliance with the load allocations will be determined where the nonpoint source discharges into recieving waters of the Lower Salinas River watershed.

7.3 Supplemental TMDL Analysis Using Load Duration Curves

Staff concluded that the concentration-based loading capacities described in the previous section are most protective of aquatic life beneficial uses, taking into account the additive toxicity of chlorpyrifos and diazinon concentrations. However, to gain a better perspective of existing loads and loading capacity, staff used a load duration curve analysis approach to estimate existing loads and assimilative capacity for chlorpyrifos and diazinon in two impaired stream segments within the project area. The two streams used in this analysis are the Reclamation Ditch at Jon Road near the City of Salinas and the Salinas River near Spreckles. Staff developed flow duration curves and load duration curves to represent water quality conditions at these two locations. Staff will use the load duration curve approach to develop estimates of existing loads and mass loading capacity for impaired waterbodies within the project area. Results of this additional analysis will be contained in future editions of this Project Report. Examples of load duraction curves are presented below.

7.3.1 Flow Duration Curves

Flow duration curves describe the percentage of time during which specified flows are equaled or exceeded (Leopold, 1994) and are graphical representations of the flow regime of a stream at a given site. Flow duration curves serve as the foundation for developing load duration curves described in the next section. Flow duration curves are a type of cumulative distribution function representing the fraction of flow observations that exceed a given flow at the site of interest. The observed flow values are first ranked from highest to lowest, then, for each observation, the percentage of observations exceeding that flow is calculated. The lowest measured flow occurs at an exceedance frequency of 100 percent, indicating that flow has equaled or exceeded this value 100 percent of the time, while the highest measured flow is found at an exceedance frequency of 0 percent. The median flow occurs at a flow exceedance frequency of 50 percent. Flow duration curves can be subjectively divided into several hydrologic flow regime classes. These hydrologic classes facilitate the analytical uses of load duration curves, in terms of water quality response to flow and to pollutant loading conditions.

Duration curves provide the benefit of considering the full range of flow conditions. Development of a flow duration curve is based on daily average stream discharge data and typically run from high flows to low flows along the x-axis, as illustrated in Figure 7-1 for the Salinas Reclamation Ditch. Figure 7-2 depicts the flow duration curve for Salinas River at Sprekles. Note that for the Salinas Reclamation Ditch the flow duration interval of forty is associated with a stream discharge of 3.4 cfs (i.e., forty percent of all observed stream discharge values equal or exceed 3.4 cfs).

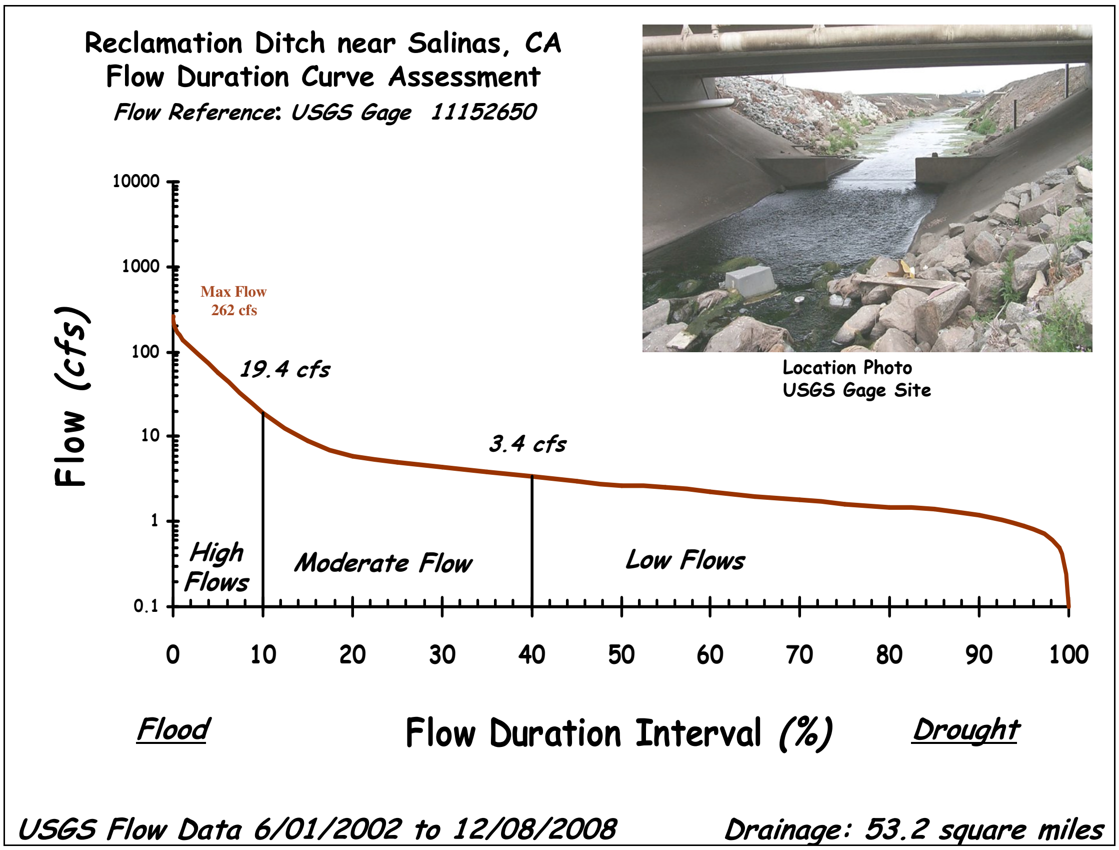


Figure 7-1. Flow duration curve for Salinas Reclamation Ditch.

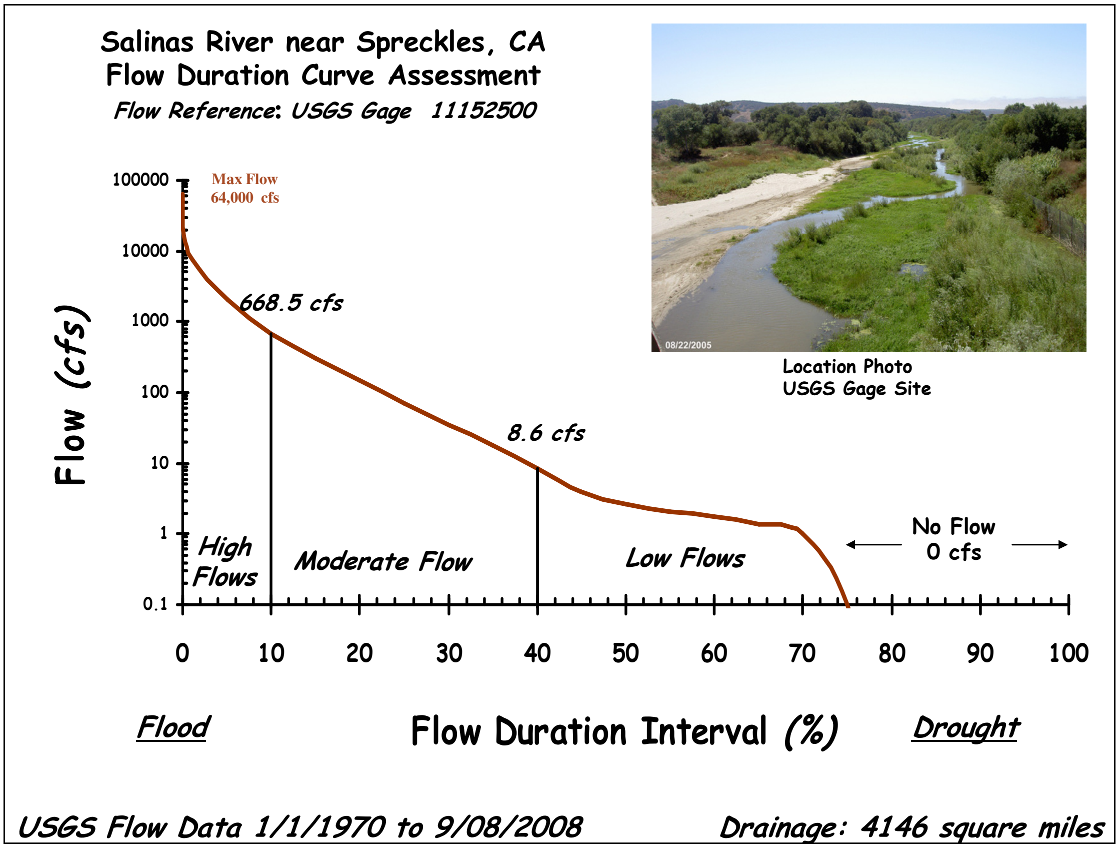


Figure 7-2. Flow duration curve for Salinas River near Sprerckes.

For perennial streams, with sustained and broad flow conditions, the flow frequency is often split into 5 flow regimes, from highest to lowest flows. Central Coast streams in contrast, tend to be flashy, or ephemeral, with short durations of high flows following precipitation events, followed by long, extended periods of low or no flows as shown for Salinas River at Spreckles (Figure 7-2). Because of the lack of sustained and broadly varying flow conditions, the flow frequencies developed for this supplemental analysis were limited to three flow regimes: high, moderate, and low as represented in Table 7-4.

Table 7-4. Hydrologic Flow Regime Classes.

Flow Duration Interval	Hydrologic Flow Regime Class
0-10%	High Flows
10-40%	Moderate Flows
40-100%	Low Flows (or Dry)

7.3.2 Load Duration Curves

A load duration curve is the allowable loading capacity of a pollutant, as a function of flow. The flow duration curve is transformed into a load duration curve by multiplying the flow by the water quality objective and a conversion factor. The water quality objective that staff selected to calculate the load duration curves was the guidance criteria of 0.025 µg/L for chlorpyrifos and 0.160 µg/L for diazinon (Sipmann and Finlayson, 2000). The load duration curves are thereby calculated by multiplying the flow at the given flow exceedance percentile, by the instantaneous chlorpyrifos or diazinon criterion times unit conversion factors; therefore the loading capacity for chlorpyrifos is:

Loading capacity (grams/day) = 0.025 µg/L (criteria) * Q (cfs) * 2.447 (unit conversion factor)

The load duration method essentially uses an entire stream flow record to provide insight into the flow conditions under which exceedances of the water quality objective occur. Exceedances that occur under low flow conditions are generally attributed to loads delivered directly to the stream such as irrigation return flow or some other form of direct discharge. Exceedances that occur under high flow conditions are typically attributed to loads that are delivered to the stream in stormwater runoff. Exceedances occurring during normal flows can be attributed to a combination of runoff and direct deposition.

The load duration curve is derived from the flow duration curves, water quality criteria, and water quality monitoring data. Points plotting above the curve represent exceedances of the water quality objective (e.g., allowable load, loading capacity). Those plotting below the curve represent compliance with standards and represent loads below the maximum loading capacity.

Salinas Reclamation Ditch load duration curves for chlorpyrifos and diazinon are shown in Figure 7-3 and Figure 7-4, respectively. Observed daily load values are computed using water quality data from the monitoring station located at Jon Road (309JON) and USGS observed flow for the day in which the water quality data was obtained. Water quality data collected between June 2002 and December 2008 were used to derive the observed daily load values (plotted as blue diamonds on the graph). The curve (brown line) represents the loading capacity in grams per day. For example, the chlorpyrifos loading capacity at a flow rate of 19.4 cubic feet per second is 1.2 grams of chlorpyrifos per day. Points above the curve on the left side of the figure are indicative of load exceedances during wet weather conditions (higher flows) and when data points plot above the curve to the right side it indicates load exceedances during dry weather conditions (lower flows). For the Reclamation Ditch the assimilative capacity for both chlorpyrifos and diazinon is exceeded under all flow conditions.

For the Salinas Reclamation Ditch, storm water management would be a logical activity to target for development of management strategies that address high flow water quality criteria exceedances. In addition, due to fairly constant high load across the moderate and low flow conditgions, irrigation tailwater management and dry-season urban runoff reduction would be a logical management stategy.

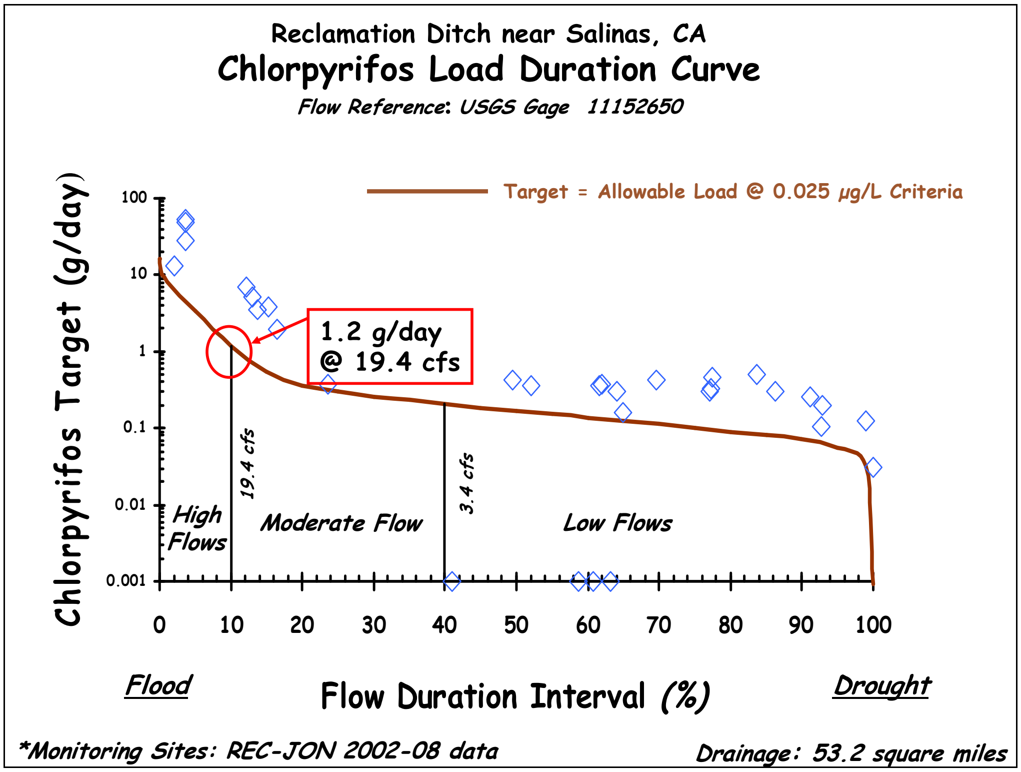


Figure 7-3. Chlorpyrifos load duration curve for Salinas Reclamation Ditch.

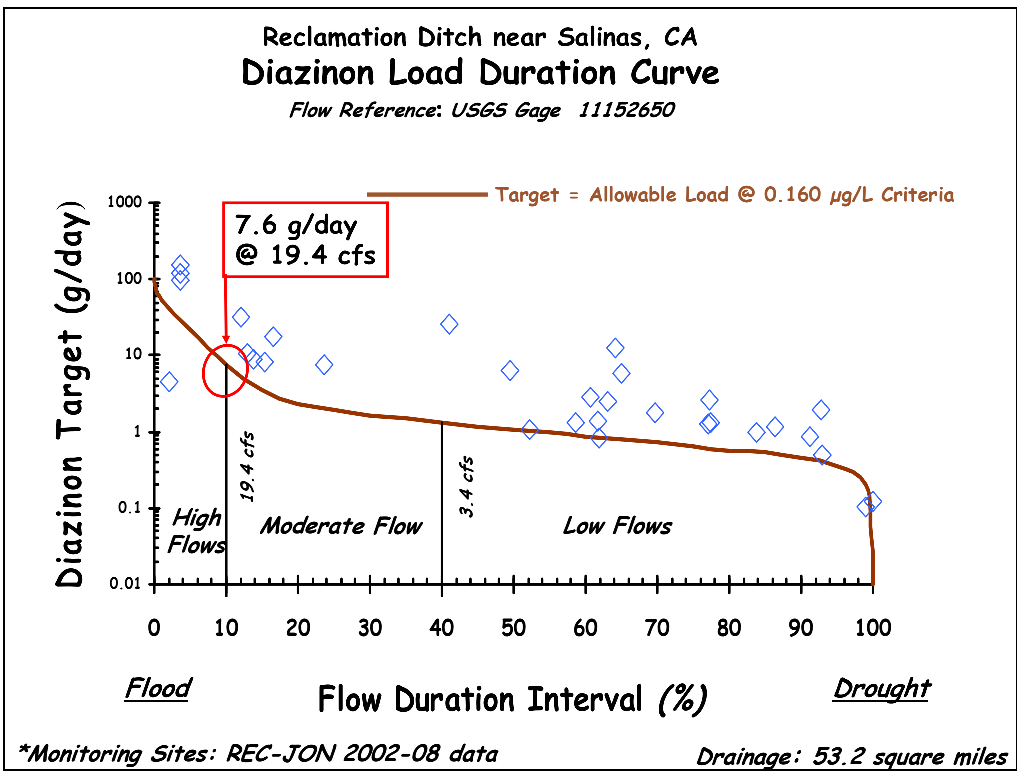


Figure 7-4. Diazinon load duration curve for Salinas Reclamation Ditch.

Figure 7-5 and Figure 7-6 show chlorpyrifos and diazinon load duration curves for Salinas River near Sprecks, respectively. As mentioned earlier in the flow duration section, no flow may be observed at this station. Staff used water quality data from from a site located near the USGS gage (CCWQP-SSP) and from at a monitoring site located at Davis Road (309DAV), approximately 1.5 miles downstream of the USGS gage. As shown on the graph, some samples were obtained from the downstream monitoring station when there was no flow at the Spreckles gage upstream. This segment of the Salinas River receives irrigation return flows resulting in flows that may be sampled at the 309DAV location even though no flow is observed at the USGS gage station. Under these conditions the flow duration curve indicates no load, due to no flow. However, five of seven samples exceeded the chlorpyrifos criteria and one of seven samples exceeded the diazinon criteria.

Chlorpyrifos loading capacity is generally exceeded in moderate to low flow conditions.

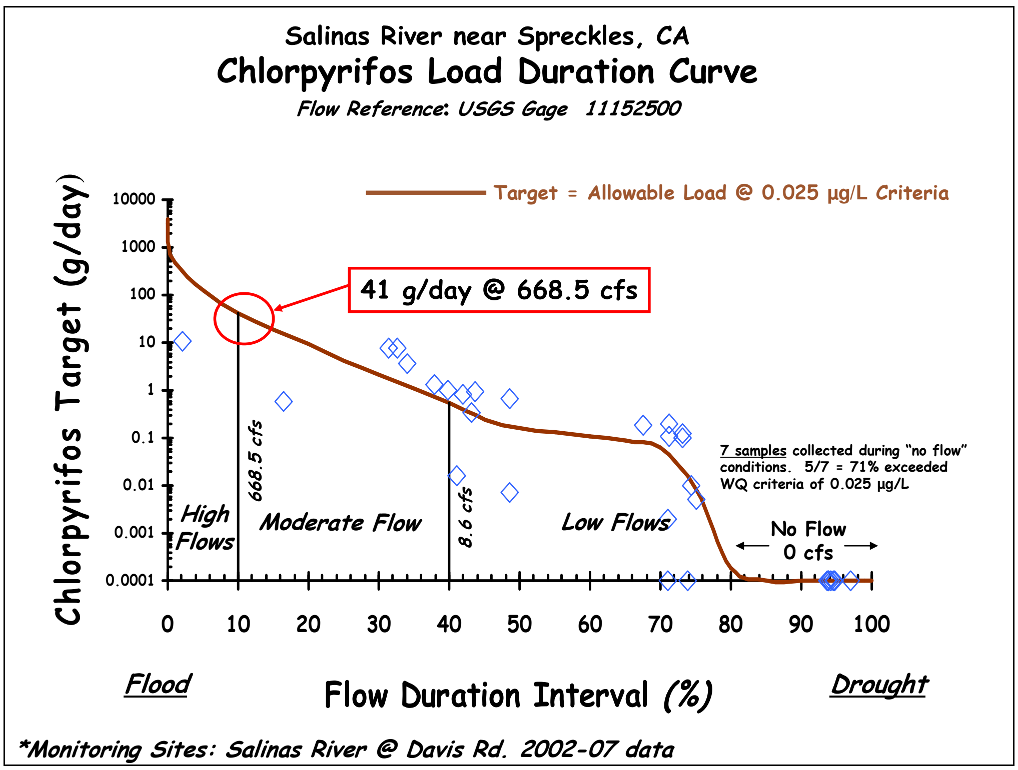


Figure 7-5. Chlorpyrifos load duration curve for Salinas River near Spreckles.

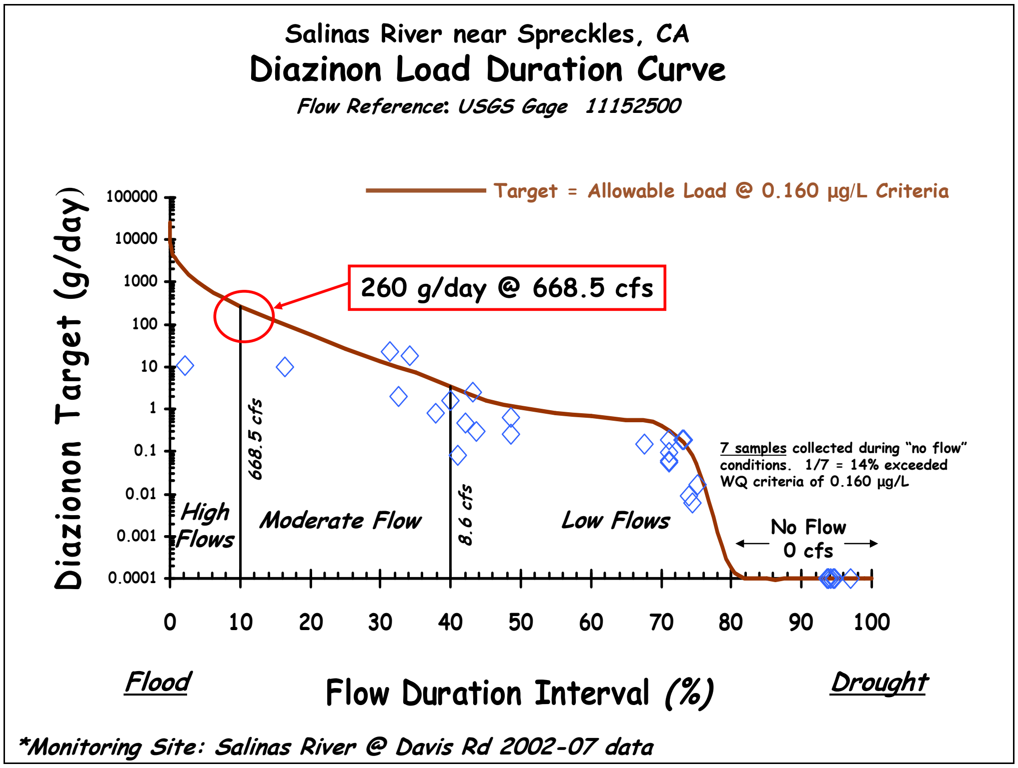


Figure 7-6. Diazinon load duration curve for Salinas River near Spreckles.

The diazinon loading capacity is ocassionally exceeded at moderate and low flow conditions. Water quality samples obtained when no flow was recorded at the USGS Spreckles gage resulted in one out of seven exceedances of the diazinon criteria.

7.3.3 Percent Reduction Goals

This section presents the methods that staff used to derive existing loads, allowable loads (loading capacity), and percent reduction goals for the Salinas Reclamation Ditch and the Salinas River. As part of the load duration analysis, staff calculated "percent reduction goals" for informational purposes only, to illustrate the difference between existing conditions and the loading capacity at the time the streams were sampled. Please note that staff has prepared percent load reduction goals for the Salinas Reclamation Ditch and for the Salinas River as examples of this methodology and that staff will prepare load reduction goals for the remaining impaired waterbodies and include this information in future editions of this Project Report.

A TMDL provides a foundation for identifying, planning, and implementing water quality-based controls to reduce both point and nonpoint source pollution. Though the data used to calculate the percent reductions may be considered historical, it provides a representation of existing chlorpyrifos and diazinon loads in the waterbodies over a range of hydrologic conditions. Therefore, the percent reduction *should not be viewed as the TMDL* but rather a goal to work towards in the implementation phase of the

TMDL process with the ultimate goal being the restoration and maintenance of in-stream water quality so that beneficial uses are met. The percent reduction can be calculated as:

Percent reduction = [(existing load) - (allowable load)/(existing load)] *100

7.3.4 Determination of Loading Capacity and Existing Load

This section presents examples of load duration curves and estimates of existing loading for the Reclamation Canal and for the Salinas River impaired waterbodies in the project area.

Staff used guidance from USEPA (2007) in using load duration curves to assess existing loads and flow-based assimilative capacity as described in the previous section of this report. Therefore, existing loading is conservatively calculated as the 90th percentile of measured chlorpyrifos and diazinon concentrations under each hydrologic flow regime class multiplied by the flow at the middle of the flow exceedance percentile. The 90 percentile of measure loads is a more conservative estimate than using the median. For example, in calculating the existing loading under high flow conditions (flow exceedance percentiles = 0-10% percent), the 5th percentile exceedance flow is multiplied by the 90th percentile of pesticide concentrations measured within the 0-10th percentile flow class. Similarly, the middle percentile (25%) of the moderate flow regime was used, to assess existing loads at moderate flow (10-40th percentile flow class). Low flows were handled a little differently. Many project area streams are ephemeral, and flow is not observed 100% of the time. In addition, water quality data is rarely available for the 80 to 100th percentile flows, which correspond either to dry stream bed conditions, or extremely limited flows. Therefore, the existing loading at low flow conditions is multiplied by the flow at the 60th percentile flow.

For a graphical example of how existing loads and flow-based assimilative capacities (TMDLs) are determined, refer to Figure 7-7.

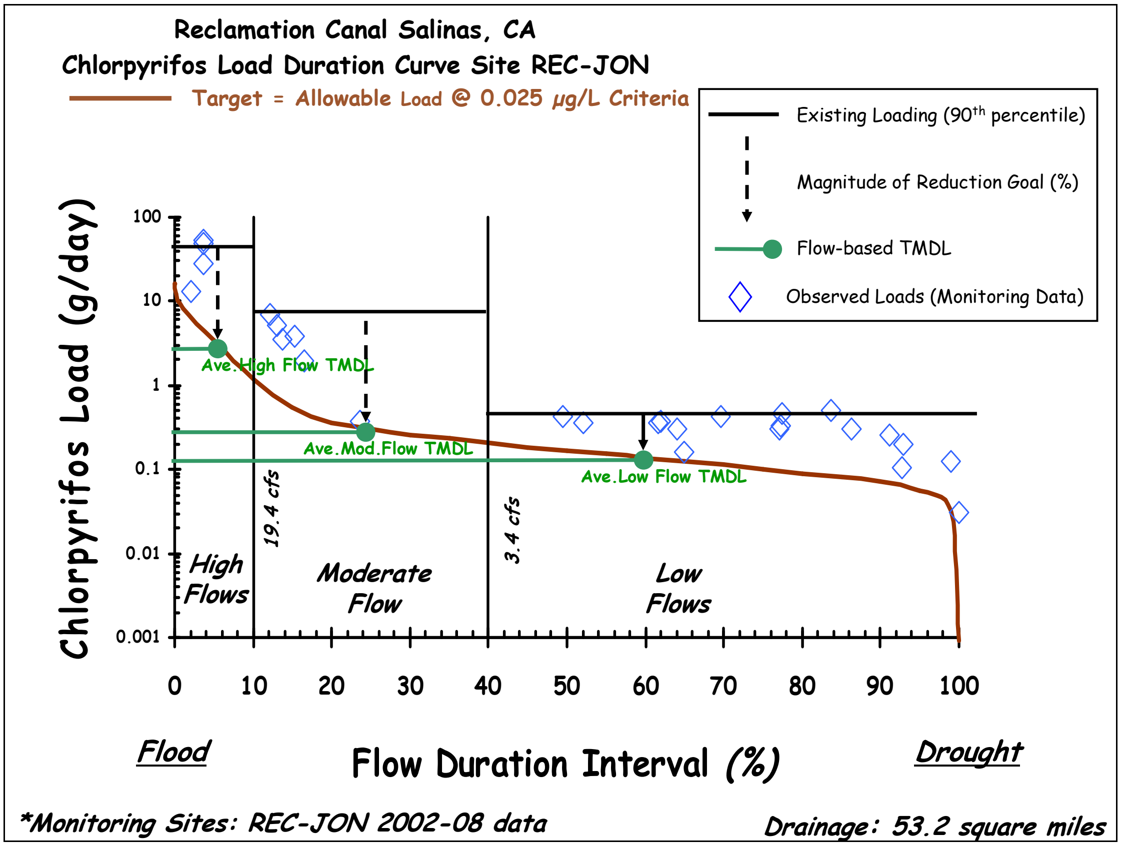


Figure 7-7. Example assessment of existing load, percent reduction goal, and flow-based TMDLs.

Staff used the load duration curve methodology to derive estimated existing loading, allowable load, and percent reductions for the Salinas Reclamation Ditch and Salinas River as presented in Table 7-5 and Table 7-6, respectively. As noted previously, staff will perform this analysis on the remaining impaired waterbodies and include this information in subsequent editions of this Project Report.

Table 7-5. Estimated existing loading, allowable load, and % reduction for Salinas Reclamation Ditch at Jon Road.

Reference flow (exceedance % in flow regime)	Existing Load: 90th percentile of loads within flow range	Allowable load for the reference flow percentile	% Load reduction
Chlorpyrifos			
5 %	51.45	3.4357	93
25 %	6.09	0.3026	95
60 %	0.43	0.1365	68
Diazinon			
5 %	143.20	21.99	85
25 %	25.03	1.94	92
60 %	6.34	0.87	86

Table 7-6. Estimated existing loading, allowable load, and % reduction for Salinas River near Spreckles

Reference flow (exceedance % in flow regime)	Existing Load: 90th percentile of loads within flow range	Allowable load for the reference flow percentile	% Load reduction
Chlorpyrifos			
5 %	10.89	123.20	N/A[a]
25 %	7.84	4.28	45
60 %	0.74	0.11	85
Diazinon			
5 %	10.89	788.50	N/A[a]
25 %	20.29	27.40	N/A[b]
60 %	0.55	0.70	N/A[b]

[a] Not applicable. Only one sample obtained for load estimation within reference flow regime.
[b] Not applicable. Existing estimated load below allowable load for reference flow regime.

7.4 Margin of Safety

The margin of safety for this TMDL is implicit in the water column numeric targets selected for chlorpyrifos and diazinon. Since this is a concentration-based TMDL the TMDL is the same as the loading capacity for each compound.

The loading capacity for chlorpyrifos and diazinon were developed by the California Department of Fish and Game following EPA protocols and therefore have the same conservative assumptions used in that procedure.

The EPA has canceled many of non-agricultural uses of chlorpyrifos and diazinon as well as some agricultural uses. Staff anticipates that urban uses of these pesticides will be greatly reduced due to these cancellations.

8 IMPLEMENTATION

NOTE TO READER: This section of the Draft Project Report is in the preliminary stages of development (work in progress). As such, staff anticipates further revisions to this section. These revisions will be contained in future editions of this document.

The Implementation Plan (Plan) outines the regulatory steps Water Board staff and stakeholders will implement. The objectives of the regulatory steps are the ultimate achievement of allocations and the TMDL within the time-period specified. The Plan also identifies the administrative tools that will be used by the Water Board to require implementation.

8.1 Agricultural Land Sources

Owners of irrigated lands must implement measures to achieve their allocation. The requirements of owners of irrigated lands, described in the Conditional Agricultural Waiver (Order RB-2004-0117), are intended to result in compliance with TMDLs. Therefore, owners of irrigated lands will demonstrate progress towards achieving their TMDL allocations through compliance with the Conditional Agricultural Waiver, and subsequent renewals thereof.

The requirements to comply with this TMDL are described in the current Conditional Agricultural Waiver, and its renewals. Staff recommends that these requirements incorporate the following:

1. Irrigation Management: Reduce/eliminate off-site run-off from irrigation.
2. Pesticide Use Reduction: Implement Integrated Pest Management, switch to pesticides with reduced environmental risk, reduction of chlorpyrifos and diazinon use.
3. Storm water control: Install and maintain storm water control structures/practices

In addition, pursuant to the Conditional Waiver of WDRs for Discharges from Irrigated Lands, dischargers shall not cause or contribute to conditions of pollution or nuisance, or to exceedances of any Regional, State, or Federal water quality standard (conditions 1 and 3, p. 13 of Order No. R3-2004-0117). Thus, compliance with the conditions of the waiver is expected to result in the reduction and/or elimination of chlorpyrifos and diazinon from irrigated agricultural lands.

8.2 Urban Storm Water Sources

The Central Coast Water Board will address chlorpyrifos and diazinon discharge from the City of Salinas municipal separate storm sewer systems (MS4) under the provisions of their individual municipal stormwater permit. As an enrollee under the their individual municipal stormwater permit, the MS4s must develop and implement a Storm Water Management Plan (SWMP) that controls urban runoff discharges into and from its MS4.

To address the MS4s TMDL wasteload allocations, the Central Coast Water Board will require the MS4s to specifically target chlorpyrifos and diazinon in urban runoff through incorporation of a Wasteload Allocation Attainment Program in its SWMP.

The Central Coast Water Board will require the Wasteload Allocation Attainment Program to include descriptions of the actions that will be taken by the MS4 to attain the TMDL wasteload allocations, and specifically address:

1. Development of an implementation and assessment strategy;
2. Source identification and prioritization
3. Best management practice identification, prioritization, implementation schedule, analysis, and effectiveness assessment;
4. Monitoring program development and implementation;
5. Reporting; including evaluation whether current best management practices are progressing towards achieving the wasteload allocations within thirteen years of the date that the TMDLs are approved by the Office of Administrative Law.
6. Coordination with stakeholders; and
7. Other pertinent factors.

The Wasteload Allocation Attainment Program will be required by the Central Coast Water Board to address each of these TMDLs that occur within the the Cities jurisdiction.

The Central Coast Water Board will require the Wasteload Allocation Attainment Program to be submitted at one of the following milestones, whichever occurs first:

1. Within one year of approval of the TMDLs by the Office of Administrative Law;
2. When required by any other Water Board-issued storm water requirements (e.g., when the Municipal Storm Water Permit is renewed).

8.3 Evaluation of Implementation Progress

It is important to monitor water quality progress, track TMDL implementation, and modify TMDLs and implementation plans as necessary, in order to assess trends in water quality to ensure that improvement is being made; oversee TMDL implementation to ensure that implementation measures are being carried out; address any uncertainty in various aspects of TMDL development; and ensure that the TMDL remains effective, given changes that may occur in the watershed after TMDL development.

The primary measure of success for this TMDL is attainment or continuous progress toward attainment of the TMDL targets and load allocations. However, in evaluating successful implementation of this TMDL, attainment of trackable implementation actions will also be heavily relied upon. Therefore, we propose two types of monitoring for this TMDL: 1) water quality monitoring, and 2) monitoring of implementation of actions.

Every three years, beginning three years after the Office of Administrative Law approves the TMDLs, the Central Coast Water Board will perform a review of implementation actions, monitoring results, and evaluations submitted by responsible parties of their progress towards achieving their allocations. The Central Coast Water Board will use annual reports, nonpoint source pollution control implementation programs, evaluations submitted by responsible parties, and other available information to determine progress toward implementing required actions and achieving the allocations and the numeric target.

Responsible parties will continue monitoring and reporting according to this plan for at least three years, at which time the Central Coast Water Board will determine the need for continuing or otherwise modifying the monitoring requirements. Responsible parties may also demonstrate that although water quality objectives are not being achieved in receiving waters, controllable sources of pathogens are not contributing to the exceedance. If this is the case, the Central Coast Water Board may re-evaluate the numeric target and allocations. For example, the Central Coast Water Board may pursue and approve a site-specific objective. The site-specific objective would be based on evidence that natural, or background sources alone were the cause of exceedances of the Basin Plan water quality objective for fecal indicator bacteria.

Three-year reviews will continue until the water quality objectives are achieved. The compliance schedule for achieving the allocations and numeric target required under these TMDLs is 3 years for dry weather condition and 10 years for wet weather conditions after the date of approval by the Office of Administrative Law.

8.4 Timeline for Implementation

Regional Board staff anticipates that the allocations, and therefore the TMDL, will be achieved in 3 years for dry season conditions (agricultural irrigation return flows) and 10 years for wet season conditions (agricultural and urban storm water flows) from the date the TMDL becomes effective (which is upon approval by the California Office Administrative Law) . The estimates are based on the time needed to develop and implement effective management practices/measures. Also, the estimate is based on the fact that agriculture relies heavily on these two chemicals, as is evidenced by the recent dramatic increase in use in diazinon. Staff anticipates that the full in-stream positive effects on water quality would be realized gradually after full implementation of management measures/practices.

Stormwater permits or the conditional waiver of waste discharge requirments for discharges from irrigated lands may include additional provisions that the Central Coast Water Board determines are necessary to control pollutants (CWA section 402(p)(3)(B)(iii)). The Central Coast Water Board will consider additional requirements if implementation of management practices do not result in achievement of water quality objectives.

8.5 Cost Estimate for Implementation & Monitoring

NOTE TO READER: Because Implementation and Monitoring components have yet to be developed, this section of the Draft Project Report is incomplete. Estimated costs will included in future editions of this document.

9 MONITORING

NOTE TO READER: This section of the Draft Project Report is in the preliminary stages of development (work in progress). As such, staff anticipates further revisions to this section. These revisions will be contained in future editions of this document.

9.1 Monitoring Requirements

Water quality monitoring and reporting requirements are necessary to assess progress towards attaining numeric targets and allocations, as well as evaluating the effectiveness of implementation actions. Monitoring requirements will be described in the regulatory mechanisms described above, i.e., through the Conditional Agricultural Waiver and storm water permits.

Water Board TMDL staff recommends a quarterly monitoring frequency, or greater, whereby two quarters are within the dry season (May-October) and two quarters are within the wet season (November-April). Staff recommends that one wet season sampling event should coincide with a storm event. When water quality data indicate progress towards attaining the numeric targets and load allocations, staff recommends increasing the frequency of monitoring so that the criteria for delisting the waterbody are met as soon as possible.

9.2 Data Assessment

NOTE TO READER: This section of the Draft Project Report is in the preliminary stages of development (work in progress). As such, staff anticipates further revisions to this section. These revisions will be contained in future editions of this document.

Data assessment for chlorpyrifos and diazinon will begin as soon as possible after data collection has begun. TMDL compliance for chlorpyrifos and diazinon will be assessed by comparing the data to the numeric targets. The water column data must be in compliance with the TMDL requirements in order for a waterbody to be removed from the 303(d)list of impaired waterbodies for a particular pollutant.

The Listing Policy, Chapter 4, California Delisting Factors, requires that waters shall be removed from the list if the number of measured exceedances supports rejection of the null hypothesis as represented in Table 4.1. The binomial distribution cannot be used to support a delisting with sample sizes less that 28.

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11 APPENDIX 2 – WATER QUALITY DATA

Station Code	Sample Date	SampleTypeCode	ProjectID	Matrix Name	Analyte Name	Unit	Basis	Result	Result Qual Code	RL
309BLA-COO_DPR	6/17/2003	Grab	DPR	SampleWater	chlorpyrifos	ug/L	ww	0.044		0.04
309BLA-COO_DPR	6/23/2003	Grab	DPR	SampleWater	chlorpyrifos	ug/L	ww	-0.04	ND	0.04
309BLA-COO_DPR	6/30/2003	Grab	DPR	SampleWater	chlorpyrifos	ug/L	ww	-0.04	ND	0.04
309BLA-COO_DPR	7/7/2003	Grab	DPR	SampleWater	chlorpyrifos	ug/L	ww	-0.04	ND	0.04
309BLA-COO_DPR	7/14/2003	Grab	DPR	SampleWater	chlorpyrifos	ug/L	ww	-0.04	ND	0.04
309BLA-COO_DPR	7/21/2003	Grab	DPR	SampleWater	chlorpyrifos	ug/L	ww	-0.04	ND	0.04
309BLA-COO_DPR	7/28/2003	Grab	DPR	SampleWater	chlorpyrifos	ug/L	ww	-0.04	ND	0.04
309BLA-COO_DPR	8/4/2003	Grab	DPR	SampleWater	chlorpyrifos	ug/L	ww	-0.04	ND	0.04
309BLA-COO_DPR	8/11/2003	Grab	DPR	SampleWater	chlorpyrifos	ug/L	ww	-0.04	ND	0.04
309BLA-COO_DPR	8/18/2003	Grab	DPR	SampleWater	chlorpyrifos	ug/L	ww	-0.04	ND	0.04
309BLA-COO_DPR	8/25/2003	Grab	DPR	SampleWater	chlorpyrifos	ug/L	ww	-0.04	ND	0.04
309BLA-COO_DPR	9/2/2003	Grab	DPR	SampleWater	chlorpyrifos	ug/L	ww	-0.04	ND	0.04
309BLA-COO_DPR	9/8/2003	Grab	DPR	SampleWater	chlorpyrifos	ug/L	ww	-0.04	ND	0.04
309BLA-COO_DPR	9/15/2003	Grab	DPR	SampleWater	chlorpyrifos	ug/L	ww	-0.04	ND	0.04
309BLA-COO_DPR	9/22/2003	Grab	DPR	SampleWater	chlorpyrifos	ug/L	ww	-0.04	ND	0.04
309BLA-COO_DPR	9/29/2003	Grab	DPR	SampleWater	chlorpyrifos	ug/L	ww	-0.04	ND	0.04
309CRR_DPR	6/16/2003	Grab	DPR	SampleWater	chlorpyrifos	ug/L	ww	0.243		0.04
309CRR_DPR	6/23/2003	Grab	DPR	SampleWater	chlorpyrifos	ug/L	ww	0.179		0.04
309CRR_DPR	6/30/2003	Grab	DPR	SampleWater	chlorpyrifos	ug/L	ww	0.114		0.04
309CRR_DPR	7/7/2003	Grab	DPR	SampleWater	chlorpyrifos	ug/L	ww	0.144		0.04
309CRR_DPR	7/14/2003	Grab	DPR	SampleWater	chlorpyrifos	ug/L	ww	0.215		0.04
309CRR_DPR	7/21/2003	Grab	DPR	SampleWater	chlorpyrifos	ug/L	ww	0.118		0.04
309CRR_DPR	7/28/2003	Grab	DPR	SampleWater	chlorpyrifos	ug/L	ww	0.127		0.04
309CRR_DPR	8/4/2003	Grab	DPR	SampleWater	chlorpyrifos	ug/L	ww	0.188		0.04
309CRR_DPR	8/11/2003	Grab	DPR	SampleWater	chlorpyrifos	ug/L	ww	0.097		0.04
309CRR_DPR	8/18/2003	Grab	DPR	SampleWater	chlorpyrifos	ug/L	ww	0.684		0.04
309CRR_DPR	8/25/2003	Grab	DPR	SampleWater	chlorpyrifos	ug/L	ww	-0.04	ND	0.04
309CRR_DPR	9/2/2003	Grab	DPR	SampleWater	chlorpyrifos	ug/L	ww	-0.04	ND	0.04
309CRR_DPR	9/8/2003	Grab	DPR	SampleWater	chlorpyrifos	ug/L	ww	-0.04	ND	0.04
309CRR_DPR	9/15/2003	Grab	DPR	SampleWater	chlorpyrifos	ug/L	ww	0.0435		0.04
309CRR_DPR	9/22/2003	Grab	DPR	SampleWater	chlorpyrifos	ug/L	ww	-0.04	ND	0.04
309CRR_DPR	9/29/2003	Grab	DPR	SampleWater	chlorpyrifos	ug/L	ww	0.0394		0.04

Station Code	Sample Date	SampleTypeCode	ProjectID	Matrix Name	Analyte Name	Unit	Basis	Result	Result Qual Code	RL
309DAV_DPR	9/13/2004	Grab	DPR	SampleWater	chlorpyrifos	ug/L	ww	-0.01	ND	0.01
309DAV_DPR	1/3/2005	Grab	DPR	SampleWater	chlorpyrifos	ug/L	ww	-0.01	ND	0.01
309DAV_DPR	5/3/2005	Grab	DPR	SampleWater	chlorpyrifos	ug/L	ww	-0.01	ND	0.01
309JON_DPR	9/13/2004	Grab	DPR	SampleWater	chlorpyrifos	ug/L	ww	0.0325		0.01
309JON_DPR	1/3/2005	Grab	DPR	SampleWater	chlorpyrifos	ug/L	ww	0.0571		0.01
309JON_DPR	5/3/2005	Grab	DPR	SampleWater	chlorpyrifos	ug/L	ww	0.0293		0.01
309POT_DPR	9/13/2004	Grab	DPR	SampleWater	chlorpyrifos	ug/L	ww	-0.01	ND	0.01
309POT_DPR	1/4/2005	Grab	DPR	SampleWater	chlorpyrifos	ug/L	ww	0.0294		0.01
309POT_DPR	5/3/2005	Grab	DPR	SampleWater	chlorpyrifos	ug/L	ww	0.0358		0.01
309QUI_DPR	6/16/2003	Grab	DPR	SampleWater	chlorpyrifos	ug/L	ww	0.113		0.04
309QUI_DPR	6/23/2003	Grab	DPR	SampleWater	chlorpyrifos	ug/L	ww	1.297		0.04
309QUI_DPR	6/30/2003	Grab	DPR	SampleWater	chlorpyrifos	ug/L	ww	0.197		0.04
309QUI_DPR	7/7/2003	Grab	DPR	SampleWater	chlorpyrifos	ug/L	ww	0.107		0.04
309QUI_DPR	7/14/2003	Grab	DPR	SampleWater	chlorpyrifos	ug/L	ww	0.179		0.04
309QUI_DPR	7/21/2003	Grab	DPR	SampleWater	chlorpyrifos	ug/L	ww	3.96		0.04
309QUI_DPR	7/28/2003	Grab	DPR	SampleWater	chlorpyrifos	ug/L	ww	0.344		0.04
309QUI_DPR	8/4/2003	Grab	DPR	SampleWater	chlorpyrifos	ug/L	ww	0.156		0.04
309QUI_DPR	8/11/2003	Grab	DPR	SampleWater	chlorpyrifos	ug/L	ww	0.371		0.04
309QUI_DPR	8/18/2003	Grab	DPR	SampleWater	chlorpyrifos	ug/L	ww	0.123		0.04
309QUI_DPR	8/25/2003	Grab	DPR	SampleWater	chlorpyrifos	ug/L	ww	0.132		0.04
309QUI_DPR	9/2/2003	Grab	DPR	SampleWater	chlorpyrifos	ug/L	ww	0.0594		0.04
309QUI_DPR	9/8/2003	Grab	DPR	SampleWater	chlorpyrifos	ug/L	ww	0.106		0.04
309QUI_DPR	9/15/2003	Grab	DPR	SampleWater	chlorpyrifos	ug/L	ww	0.073		0.04
309QUI_DPR	9/22/2003	Grab	DPR	SampleWater	chlorpyrifos	ug/L	ww	0.0936		0.04
309QUI_DPR	9/29/2003	Grab	DPR	SampleWater	chlorpyrifos	ug/L	ww	0.066		0.04
309QUI_DPR	9/13/2004	Grab	DPR	SampleWater	chlorpyrifos	ug/L	ww	0.055		0.01
309QUI_DPR	1/3/2005	Grab	DPR	SampleWater	chlorpyrifos	ug/L	ww	0.471		0.01
309QUI_DPR	5/3/2005	Grab	DPR	SampleWater	chlorpyrifos	ug/L	ww	0.109		0.01
309REC-DLT_DPR	6/16/2003	Grab	DPR	SampleWater	chlorpyrifos	ug/L	ww	-0.04	ND	0.04
309REC-DLT_DPR	6/23/2003	Grab	DPR	SampleWater	chlorpyrifos	ug/L	ww	0.04		0.04
309REC-DLT_DPR	6/30/2003	Grab	DPR	SampleWater	chlorpyrifos	ug/L	ww	-0.04	ND	0.04
309REC-DLT_DPR	7/7/2003	Grab	DPR	SampleWater	chlorpyrifos	ug/L	ww	-0.04	ND	0.04

Station Code	Sample Date	SampleTypeCode	ProjectID	Matrix Name	Analyte Name	Unit	Basis	Result	Result Qual Code	RL
309REC-DLT_DPR	7/14/2003	Grab	DPR	SampleWater	chlorpyrifos	ug/L	ww	-0.04	ND	0.04
309REC-DLT_DPR	7/21/2003	Grab	DPR	SampleWater	chlorpyrifos	ug/L	ww	-0.04	ND	0.04
309REC-DLT_DPR	7/28/2003	Grab	DPR	SampleWater	chlorpyrifos	ug/L	ww	-0.04	ND	0.04
309REC-DLT_DPR	8/4/2003	Grab	DPR	SampleWater	chlorpyrifos	ug/L	ww	-0.04	ND	0.04
309REC-DLT_DPR	8/11/2003	Grab	DPR	SampleWater	chlorpyrifos	ug/L	ww	-0.04	ND	0.04
309REC-DLT_DPR	8/18/2003	Grab	DPR	SampleWater	chlorpyrifos	ug/L	ww	-0.04	ND	0.04
309REC-DLT_DPR	8/25/2003	Grab	DPR	SampleWater	chlorpyrifos	ug/L	ww	-0.04	ND	0.04
309REC-DLT_DPR	9/2/2003	Grab	DPR	SampleWater	chlorpyrifos	ug/L	ww	-0.04	ND	0.04
309REC-DLT_DPR	9/8/2003	Grab	DPR	SampleWater	chlorpyrifos	ug/L	ww	-0.04	ND	0.04
309REC-DLT_DPR	9/15/2003	Grab	DPR	SampleWater	chlorpyrifos	ug/L	ww	-0.04	ND	0.04
309REC-DLT_DPR	9/22/2003	Grab	DPR	SampleWater	chlorpyrifos	ug/L	ww	-0.04	ND	0.04
309REC-DLT_DPR	9/29/2003	Grab	DPR	SampleWater	chlorpyrifos	ug/L	ww	-0.04	ND	0.04
309SBR_DPR	9/13/2004	Grab	DPR	SampleWater	chlorpyrifos	ug/L	ww	-0.01	ND	0.01
309SBR_DPR	1/3/2005	Grab	DPR	SampleWater	chlorpyrifos	ug/L	ww	0.0102		0.01
309SBR_DPR	5/3/2005	Grab	DPR	SampleWater	chlorpyrifos	ug/L	ww	-0.01	ND	0.01
309BLA-COO_DPR	6/17/2003	Grab	DPR	SampleWater	diazinon	ug/L	ww	0.156		0.04
309BLA-COO_DPR	6/23/2003	Grab	DPR	SampleWater	diazinon	ug/L	ww	0.208		0.04
309BLA-COO_DPR	6/30/2003	Grab	DPR	SampleWater	diazinon	ug/L	ww	0.097		0.04
309BLA-COO_DPR	7/7/2003	Grab	DPR	SampleWater	diazinon	ug/L	ww	0.0644		0.04
309BLA-COO_DPR	7/14/2003	Grab	DPR	SampleWater	diazinon	ug/L	ww	0.0939		0.04
309BLA-COO_DPR	7/21/2003	Grab	DPR	SampleWater	diazinon	ug/L	ww	0.073		0.04
309BLA-COO_DPR	7/28/2003	Grab	DPR	SampleWater	diazinon	ug/L	ww	0.066		0.04
309BLA-COO_DPR	8/4/2003	Grab	DPR	SampleWater	diazinon	ug/L	ww	0.471		0.04
309BLA-COO_DPR	8/11/2003	Grab	DPR	SampleWater	diazinon	ug/L	ww	0.0445		0.04
309BLA-COO_DPR	8/18/2003	Grab	DPR	SampleWater	diazinon	ug/L	ww	0.395		0.04
309BLA-COO_DPR	8/25/2003	Grab	DPR	SampleWater	diazinon	ug/L	ww	0.0891		0.04
309BLA-COO_DPR	9/2/2003	Grab	DPR	SampleWater	diazinon	ug/L	ww	0.114		0.04
309BLA-COO_DPR	9/8/2003	Grab	DPR	SampleWater	diazinon	ug/L	ww	0.4		0.04
309BLA-COO_DPR	9/15/2003	Grab	DPR	SampleWater	diazinon	ug/L	ww	0.684		0.04
309BLA-COO_DPR	9/22/2003	Grab	DPR	SampleWater	diazinon	ug/L	ww	0.221		0.04
309BLA-COO_DPR	9/29/2003	Grab	DPR	SampleWater	diazinon	ug/L	ww	0.0606		0.04
309CRR_DPR	6/16/2003	Grab	DPR	SampleWater	diazinon	ug/L	ww	0.16		0.04

Station Code	Sample Date	SampleTypeCode	ProjectID	Matrix Name	Analyte Name	Unit	Basis	Result	Result Qual Code	RL
309CRR_DPR	6/23/2003	Grab	DPR	SampleWater	diazinon	ug/L	ww	0.241		0.04
309CRR_DPR	6/30/2003	Grab	DPR	SampleWater	diazinon	ug/L	ww	0.068		0.04
309CRR_DPR	7/7/2003	Grab	DPR	SampleWater	diazinon	ug/L	ww	0.0681		0.04
309CRR_DPR	7/14/2003	Grab	DPR	SampleWater	diazinon	ug/L	ww	0.726		0.04
309CRR_DPR	7/21/2003	Grab	DPR	SampleWater	diazinon	ug/L	ww	0.13		0.04
309CRR_DPR	7/28/2003	Grab	DPR	SampleWater	diazinon	ug/L	ww	0.15		0.04
309CRR_DPR	8/4/2003	Grab	DPR	SampleWater	diazinon	ug/L	ww	0.254		0.04
309CRR_DPR	8/11/2003	Grab	DPR	SampleWater	diazinon	ug/L	ww	5.33		0.04
309CRR_DPR	8/18/2003	Grab	DPR	SampleWater	diazinon	ug/L	ww	0.34		0.04
309CRR_DPR	8/25/2003	Grab	DPR	SampleWater	diazinon	ug/L	ww	0.0605		0.04
309CRR_DPR	9/2/2003	Grab	DPR	SampleWater	diazinon	ug/L	ww	0.13		0.04
309CRR_DPR	9/8/2003	Grab	DPR	SampleWater	diazinon	ug/L	ww	0.16		0.04
309CRR_DPR	9/15/2003	Grab	DPR	SampleWater	diazinon	ug/L	ww	0.158		0.04
309CRR_DPR	9/22/2003	Grab	DPR	SampleWater	diazinon	ug/L	ww	0.24		0.04
309CRR_DPR	9/29/2003	Grab	DPR	SampleWater	diazinon	ug/L	ww	0.128		0.04
309DAV_DPR	9/13/2004	Grab	DPR	SampleWater	diazinon	ug/L	ww	0.0295		0.01
309DAV_DPR	1/3/2005	Grab	DPR	SampleWater	diazinon	ug/L	ww	-0.01	ND	0.01
309DAV_DPR	5/3/2005	Grab	DPR	SampleWater	diazinon	ug/L	ww	0.0169		0.01
309JON_DPR	9/13/2004	Grab	DPR	SampleWater	diazinon	ug/L	ww	1.16		0.01
309JON_DPR	1/3/2005	Grab	DPR	SampleWater	diazinon	ug/L	ww	0.0199		0.01
309JON_DPR	5/3/2005	Grab	DPR	SampleWater	diazinon	ug/L	ww	0.582		0.01
309POT_DPR	9/13/2004	Grab	DPR	SampleWater	diazinon	ug/L	ww	0.106		0.01
309POT_DPR	1/4/2005	Grab	DPR	SampleWater	diazinon	ug/L	ww	0.0318		0.01
309POT_DPR	5/3/2005	Grab	DPR	SampleWater	diazinon	ug/L	ww	0.393		0.01
309QUI_DPR	6/16/2003	Grab	DPR	SampleWater	diazinon	ug/L	ww	0.126		0.04
309QUI_DPR	6/23/2003	Grab	DPR	SampleWater	diazinon	ug/L	ww	0.0825		0.04
309QUI_DPR	6/30/2003	Grab	DPR	SampleWater	diazinon	ug/L	ww	0.118		0.04
309QUI_DPR	7/7/2003	Grab	DPR	SampleWater	diazinon	ug/L	ww	0.053		0.04
309QUI_DPR	7/14/2003	Grab	DPR	SampleWater	diazinon	ug/L	ww	0.212		0.04
309QUI_DPR	7/21/2003	Grab	DPR	SampleWater	diazinon	ug/L	ww	0.0809		0.04
309QUI_DPR	7/28/2003	Grab	DPR	SampleWater	diazinon	ug/L	ww	0.066		0.04
309QUI_DPR	8/4/2003	Grab	DPR	SampleWater	diazinon	ug/L	ww	4.09		0.04

Station Code	Sample Date	SampleTypeCode	ProjectID	Matrix Name	Analyte Name	Unit	Basis	Result	Result Qual Code	RL
309QUI_DPR	8/11/2003	Grab	DPR	SampleWater	diazinon	ug/L	ww	0.327		0.04
309QUI_DPR	8/18/2003	Grab	DPR	SampleWater	diazinon	ug/L	ww	1.06		0.04
309QUI_DPR	8/25/2003	Grab	DPR	SampleWater	diazinon	ug/L	ww	0.128		0.04
309QUI_DPR	9/2/2003	Grab	DPR	SampleWater	diazinon	ug/L	ww	0.85		0.04
309QUI_DPR	9/8/2003	Grab	DPR	SampleWater	diazinon	ug/L	ww	10.6		0.04
309QUI_DPR	9/15/2003	Grab	DPR	SampleWater	diazinon	ug/L	ww	7.25		0.04
309QUI_DPR	9/22/2003	Grab	DPR	SampleWater	diazinon	ug/L	ww	0.63		0.04
309QUI_DPR	9/29/2003	Grab	DPR	SampleWater	diazinon	ug/L	ww	0.203		0.04
309QUI_DPR	9/13/2004	Grab	DPR	SampleWater	diazinon	ug/L	ww	0.156		0.01
309QUI_DPR	1/3/2005	Grab	DPR	SampleWater	diazinon	ug/L	ww	0.0264		0.01
309QUI_DPR	5/3/2005	Grab	DPR	SampleWater	diazinon	ug/L	ww	0.0705		0.01
309REC-DLT_DPR	6/16/2003	Grab	DPR	SampleWater	diazinon	ug/L	ww	0.616		0.04
309REC-DLT_DPR	6/23/2003	Grab	DPR	SampleWater	diazinon	ug/L	ww	0.698		0.04
309REC-DLT_DPR	6/30/2003	Grab	DPR	SampleWater	diazinon	ug/L	ww	0.602		0.04
309REC-DLT_DPR	7/7/2003	Grab	DPR	SampleWater	diazinon	ug/L	ww	0.413		0.04
309REC-DLT_DPR	7/14/2003	Grab	DPR	SampleWater	diazinon	ug/L	ww	1.097		0.04
309REC-DLT_DPR	7/21/2003	Grab	DPR	SampleWater	diazinon	ug/L	ww	2.37		0.04
309REC-DLT_DPR	7/28/2003	Grab	DPR	SampleWater	diazinon	ug/L	ww	0.841		0.04
309REC-DLT_DPR	8/4/2003	Grab	DPR	SampleWater	diazinon	ug/L	ww	0.762		0.04
309REC-DLT_DPR	8/11/2003	Grab	DPR	SampleWater	diazinon	ug/L	ww	3.16		0.04
309REC-DLT_DPR	8/18/2003	Grab	DPR	SampleWater	diazinon	ug/L	ww	1.5		0.04
309REC-DLT_DPR	8/25/2003	Grab	DPR	SampleWater	diazinon	ug/L	ww	1.68		0.04
309REC-DLT_DPR	9/2/2003	Grab	DPR	SampleWater	diazinon	ug/L	ww	0.95		0.04
309REC-DLT_DPR	9/8/2003	Grab	DPR	SampleWater	diazinon	ug/L	ww	2.03		0.04
309REC-DLT_DPR	9/15/2003	Grab	DPR	SampleWater	diazinon	ug/L	ww	0.282		0.04
309REC-DLT_DPR	9/22/2003	Grab	DPR	SampleWater	diazinon	ug/L	ww	0.643		0.04
309REC-DLT_DPR	9/29/2003	Grab	DPR	SampleWater	diazinon	ug/L	ww	2.48		0.04
309SBR_DPR	9/13/2004	Grab	DPR	SampleWater	diazinon	ug/L	ww	0.017		0.01
309SBR_DPR	1/3/2005	Grab	DPR	SampleWater	diazinon	ug/L	ww	-0.01	ND	0.01
309SBR_DPR	5/3/2005	Grab	DPR	SampleWater	diazinon	ug/L	ww	0.0115		0.01

Station Code	Sample Date	Sample Type Code	ProjectID	Matrix Name	Method Name	Analyte Name	Unit	Basis	Result
BLA-COO	7/8/2002	Grab	R3_CCOWS	samplewater	PumpMobile	Chlorpyrifos	ng/L		58
BLA-COO	8/29/2002	Grab	R3_CCOWS	samplewater	PumpMobile	Chlorpyrifos	ng/L		58
BLA-COO	9/13/2002	Grab	R3_CCOWS	samplewater	PumpMobile	Chlorpyrifos	ng/L		62
BLA-COO	9/25/2002	Grab	R3_CCOWS	samplewater	PumpMobile	Chlorpyrifos	ng/L		51
BLA-COO	10/22/2002	Grab	R3_CCOWS	samplewater	PumpMobile	Chlorpyrifos	ng/L		61
BLA-COO	11/6/2002	Grab	R3_CCOWS	samplewater	PumpMobile	Chlorpyrifos	ng/L		45
BLA-COO	11/8/2002	Grab	R3_CCOWS	samplewater	PumpMobile	Chlorpyrifos	ng/L		110
BLA-COO	11/8/2002	Grab	R3_CCOWS	samplewater	PumpMobile	Chlorpyrifos	ng/L		1065
BLA-COO	11/8/2002	Grab	R3_CCOWS	samplewater	PumpMobile	Chlorpyrifos	ng/L		1219
BLA-COO	11/11/2002	Grab	R3_CCOWS	samplewater	PumpMobile	Chlorpyrifos	ng/L		123
BLA-COO	2/15/2003	Grab	R3_CCOWS	samplewater	PumpMobile	Chlorpyrifos	ng/L		57
BLA-COO	2/19/2003	Grab	R3_CCOWS	samplewater	PumpMobile	Chlorpyrifos	ng/L		79
BLA-COO	2/20/2003	Grab	R3_CCOWS	samplewater	PumpMobile	Chlorpyrifos	ng/L		68
BLA-COO	3/12/2003	Grab	R3_CCOWS	samplewater	PumpMobile	Chlorpyrifos	ng/L		53
BLA-COO	3/15/2003	Grab	R3_CCOWS	samplewater	PumpMobile	Chlorpyrifos	ng/L		5317
BLA-COO	3/17/2003	Grab	R3_CCOWS	samplewater	PumpMobile	Chlorpyrifos	ng/L		65
BLA-COO	4/19/2003	Grab	R3_CCOWS	samplewater	PumpMobile	Chlorpyrifos	ng/L		0
BLA-COO	5/30/2003	Grab	R3_CCOWS	samplewater	PumpMobile	Chlorpyrifos	ng/L		58
BLA-COO	6/9/2003	Grab	R3_CCOWS	samplewater	PumpMobile	Chlorpyrifos	ng/L		58
BLA-COO	7/14/2003	Grab	R3_CCOWS	samplewater	PumpMobile	Chlorpyrifos	ng/L		68
BLA-COO	8/3/2003	Grab	R3_CCOWS	samplewater	PumpMobile	Chlorpyrifos	ng/L		70
BLA-COO	9/18/2003	Grab	R3_CCOWS	samplewater	PumpMobile	Chlorpyrifos	ng/L		65
BLA-COO	10/21/2003	Grab	R3_CCOWS	samplewater	PumpMobile	Chlorpyrifos	ng/L		94
BLA-PUM	7/8/2002	Grab	R3_CCOWS	samplewater	PumpMobile	Chlorpyrifos	ng/L		63
BLA-PUM	8/29/2002	Grab	R3_CCOWS	samplewater	PumpMobile	Chlorpyrifos	ng/L		51
BLA-PUM	9/13/2002	Grab	R3_CCOWS	samplewater	PumpMobile	Chlorpyrifos	ng/L		56
BLA-PUM	9/25/2002	Grab	R3_CCOWS	samplewater	PumpMobile	Chlorpyrifos	ng/L		60
BLA-PUM	10/22/2002	Grab	R3_CCOWS	samplewater	PumpMobile	Chlorpyrifos	ng/L		58
BLA-PUM	11/6/2002	Grab	R3_CCOWS	samplewater	PumpMobile	Chlorpyrifos	ng/L		59
BLA-PUM	11/11/2002	Grab	R3_CCOWS	samplewater	PumpMobile	Chlorpyrifos	ng/L		123
BLA-PUM	2/15/2003	Grab	R3_CCOWS	samplewater	PumpMobile	Chlorpyrifos	ng/L		69
BLA-PUM	2/20/2003	Grab	R3_CCOWS	samplewater	PumpMobile	Chlorpyrifos	ng/L		83
BLA-PUM	3/12/2003	Grab	R3_CCOWS	samplewater	PumpMobile	Chlorpyrifos	ng/L		54
BLA-PUM	3/17/2003	Grab	R3_CCOWS	samplewater	PumpMobile	Chlorpyrifos	ng/L		107

Station Code	Sample Date	Sample Type Code	ProjectID	Matrix Name	Method Name	Analyte Name	Unit	Basis	Result
BLA-PUM	4/19/2003	Grab	R3_CCOWS	samplewater	PumpMobile	Chlorpyrifos	ng/L		52
BLA-PUM	5/30/2003	Grab	R3_CCOWS	samplewater	PumpMobile	Chlorpyrifos	ng/L		52
BLA-PUM	6/9/2003	Grab	R3_CCOWS	samplewater	PumpMobile	Chlorpyrifos	ng/L		58
BLA-PUM	7/14/2003	Grab	R3_CCOWS	samplewater	PumpMobile	Chlorpyrifos	ng/L		58
BLA-PUM	8/3/2003	Grab	R3_CCOWS	samplewater	PumpMobile	Chlorpyrifos	ng/L		82
BLA-PUM	9/18/2003	Grab	R3_CCOWS	samplewater	PumpMobile	Chlorpyrifos	ng/L		60
BLA-PUM	10/21/2003	Grab	R3_CCOWS	samplewater	PumpMobile	Chlorpyrifos	ng/L		0
EP1-ROG	7/8/2002	Grab	R3_CCOWS	samplewater	PumpMobile	Chlorpyrifos	ng/L		119
EP1-ROG	8/29/2002	Grab	R3_CCOWS	samplewater	PumpMobile	Chlorpyrifos	ng/L		132
EP1-ROG	9/13/2002	Grab	R3_CCOWS	samplewater	PumpMobile	Chlorpyrifos	ng/L		849
EP1-ROG	9/25/2002	Grab	R3_CCOWS	samplewater	PumpMobile	Chlorpyrifos	ng/L		386
EP1-ROG	10/22/2002	Grab	R3_CCOWS	samplewater	PumpMobile	Chlorpyrifos	ng/L		294
EP1-ROG	11/6/2002	Grab	R3_CCOWS	samplewater	PumpMobile	Chlorpyrifos	ng/L		347
EP1-ROG	11/8/2002	Grab	R3_CCOWS	samplewater	PumpMobile	Chlorpyrifos	ng/L		230
EP1-ROG	11/11/2002	Grab	R3_CCOWS	samplewater	PumpMobile	Chlorpyrifos	ng/L		497
EP1-ROG	2/15/2003	Grab	R3_CCOWS	samplewater	PumpMobile	Chlorpyrifos	ng/L		603
EP1-ROG	2/19/2003	Grab	R3_CCOWS	samplewater	PumpMobile	Chlorpyrifos	ng/L		860
EP1-ROG	2/20/2003	Grab	R3_CCOWS	samplewater	PumpMobile	Chlorpyrifos	ng/L		511
EP1-ROG	3/13/2003	Grab	R3_CCOWS	samplewater	PumpMobile	Chlorpyrifos	ng/L		788
EP1-ROG	3/15/2003	Grab	R3_CCOWS	samplewater	PumpMobile	Chlorpyrifos	ng/L		938
EP1-ROG	3/17/2003	Grab	R3_CCOWS	samplewater	PumpMobile	Chlorpyrifos	ng/L		374
EP1-ROG	4/19/2003	Grab	R3_CCOWS	samplewater	PumpMobile	Chlorpyrifos	ng/L		340
EP1-ROG	5/31/2003	Grab	R3_CCOWS	samplewater	PumpMobile	Chlorpyrifos	ng/L		114
EP1-ROG	6/10/2003	Grab	R3_CCOWS	samplewater	PumpMobile	Chlorpyrifos	ng/L		98
EP1-ROG	6/10/2003	Grab	R3_CCOWS	samplewater	PumpMobile	Chlorpyrifos	ng/L		108
EP1-ROG	6/10/2003	Grab	R3_CCOWS	samplewater	PumpMobile	Chlorpyrifos	ng/L		116
EP1-ROG	7/14/2003	Grab	R3_CCOWS	samplewater	PumpMobile	Chlorpyrifos	ng/L		190
EP1-ROG	8/3/2003	Grab	R3_CCOWS	samplewater	PumpMobile	Chlorpyrifos	ng/L		858
EP1-ROG	9/19/2003	Grab	R3_CCOWS	samplewater	PumpMobile	Chlorpyrifos	ng/L		619
EP1-ROG	10/21/2003	Grab	R3_CCOWS	samplewater	PumpMobile	Chlorpyrifos	ng/L		477
EPL-EPL	7/8/2002	Grab	R3_CCOWS	samplewater	PumpMobile	Chlorpyrifos	ng/L		91
EPL-EPL	8/29/2002	Grab	R3_CCOWS	samplewater	PumpMobile	Chlorpyrifos	ng/L		55
EPL-EPL	9/13/2002	Grab	R3_CCOWS	samplewater	PumpMobile	Chlorpyrifos	ng/L		55
EPL-EPL	9/25/2002	Grab	R3_CCOWS	samplewater	PumpMobile	Chlorpyrifos	ng/L		58

Station Code	Sample Date	Sample Type Code	ProjectID	Matrix Name	Method Name	Analyte Name	Unit	Basis	Result
EPL-EPL	10/23/2002	Grab	R3_CCOWS	samplewater	PumpMobile	Chlorpyrifos	ng/L		87
EPL-EPL	11/6/2002	Grab	R3_CCOWS	samplewater	PumpMobile	Chlorpyrifos	ng/L		73
EPL-EPL	11/15/2002	Grab	R3_CCOWS	samplewater	PumpMobile	Chlorpyrifos	ng/L		56
EPL-EPL	3/13/2003	Grab	R3_CCOWS	samplewater	PumpMobile	Chlorpyrifos	ng/L		47
EPL-EPL	3/17/2003	Grab	R3_CCOWS	samplewater	PumpMobile	Chlorpyrifos	ng/L		71
EPL-EPL	4/19/2003	Grab	R3_CCOWS	samplewater	PumpMobile	Chlorpyrifos	ng/L		41
EPL-EPL	5/31/2003	Grab	R3_CCOWS	samplewater	PumpMobile	Chlorpyrifos	ng/L		74
EPL-EPL	6/10/2003	Grab	R3_CCOWS	samplewater	PumpMobile	Chlorpyrifos	ng/L		63
EPL-EPL	7/14/2003	Grab	R3_CCOWS	samplewater	PumpMobile	Chlorpyrifos	ng/L		75
EPL-EPL	8/3/2003	Grab	R3_CCOWS	samplewater	PumpMobile	Chlorpyrifos	ng/L		66
EPL-EPL	9/19/2003	Grab	R3_CCOWS	samplewater	PumpMobile	Chlorpyrifos	ng/L		68
EPL-EPL	10/21/2003	Grab	R3_CCOWS	samplewater	PumpMobile	Chlorpyrifos	ng/L		45
MOS-SAN	7/9/2002	Grab	R3_CCOWS	samplewater	PumpMobile	Chlorpyrifos	ng/L		85
MOS-SAN	8/29/2002	Grab	R3_CCOWS	samplewater	PumpMobile	Chlorpyrifos	ng/L		70
MOS-SAN	9/13/2002	Grab	R3_CCOWS	samplewater	PumpMobile	Chlorpyrifos	ng/L		68
MOS-SAN	9/25/2002	Grab	R3_CCOWS	samplewater	PumpMobile	Chlorpyrifos	ng/L		56
MOS-SAN	10/22/2002	Grab	R3_CCOWS	samplewater	PumpMobile	Chlorpyrifos	ng/L		91
MOS-SAN	11/6/2002	Grab	R3_CCOWS	samplewater	PumpMobile	Chlorpyrifos	ng/L		90
MOS-SAN	11/11/2002	Grab	R3_CCOWS	samplewater	PumpMobile	Chlorpyrifos	ng/L		104
MOS-SAN	2/14/2003	Grab	R3_CCOWS	samplewater	PumpMobile	Chlorpyrifos	ng/L		145
MOS-SAN	2/20/2003	Grab	R3_CCOWS	samplewater	PumpMobile	Chlorpyrifos	ng/L		86
MOS-SAN	3/12/2003	Grab	R3_CCOWS	samplewater	PumpMobile	Chlorpyrifos	ng/L		97
MOS-SAN	3/17/2003	Grab	R3_CCOWS	samplewater	PumpMobile	Chlorpyrifos	ng/L		51
MOS-SAN	4/19/2003	Grab	R3_CCOWS	samplewater	PumpMobile	Chlorpyrifos	ng/L		61
MOS-SAN	5/30/2003	Grab	R3_CCOWS	samplewater	PumpMobile	Chlorpyrifos	ng/L		88
MOS-SAN	6/9/2003	Grab	R3_CCOWS	samplewater	PumpMobile	Chlorpyrifos	ng/L		90
MOS-SAN	7/15/2003	Grab	R3_CCOWS	samplewater	PumpMobile	Chlorpyrifos	ng/L		81
MOS-SAN	8/4/2003	Grab	R3_CCOWS	samplewater	PumpMobile	Chlorpyrifos	ng/L		74
MOS-SAN	9/19/2003	Grab	R3_CCOWS	samplewater	PumpMobile	Chlorpyrifos	ng/L		88
MOS-SAN	10/21/2003	Grab	R3_CCOWS	samplewater	PumpMobile	Chlorpyrifos	ng/L		57
OLS-MON	7/1/2002	Grab	R3_CCOWS	samplewater	Grab*	Chlorpyrifos	ng/L		58
OLS-POT	7/1/2002	Grab	R3_CCOWS	samplewater	Grab*	Chlorpyrifos	ng/L		60
OLS-POT	7/9/2002	Grab	R3_CCOWS	samplewater	PumpMobile	Chlorpyrifos	ng/L		111
OLS-POT	8/29/2002	Grab	R3_CCOWS	samplewater	PumpMobile	Chlorpyrifos	ng/L		64

Station Code	Sample Date	Sample Type Code	ProjectID	Matrix Name	Method Name	Analyte Name	Unit	Basis	Result
OLS-POT	9/13/2002	Grab	R3_CCOWS	samplewater	PumpMobile	Chlorpyrifos	ng/L		53
OLS-POT	9/25/2002	Grab	R3_CCOWS	samplewater	PumpMobile	Chlorpyrifos	ng/L		44
OLS-POT	10/22/2002	Grab	R3_CCOWS	samplewater	PumpMobile	Chlorpyrifos	ng/L		72
OLS-POT	11/6/2002	Grab	R3_CCOWS	samplewater	PumpMobile	Chlorpyrifos	ng/L		55
OLS-POT	11/8/2002	Grab	R3_CCOWS	samplewater	PumpMobile	Chlorpyrifos	ng/L		222
OLS-POT	11/11/2002	Grab	R3_CCOWS	samplewater	PumpMobile	Chlorpyrifos	ng/L		110
OLS-POT	2/14/2003	Grab	R3_CCOWS	samplewater	PumpMobile	Chlorpyrifos	ng/L		101
OLS-POT	2/19/2003	Grab	R3_CCOWS	samplewater	PumpMobile	Chlorpyrifos	ng/L		125
OLS-POT	2/20/2003	Grab	R3_CCOWS	samplewater	PumpMobile	Chlorpyrifos	ng/L		98
OLS-POT	3/12/2003	Grab	R3_CCOWS	samplewater	PumpMobile	Chlorpyrifos	ng/L		75
OLS-POT	3/15/2003	Grab	R3_CCOWS	samplewater	PumpMobile	Chlorpyrifos	ng/L		106
OLS-POT	3/17/2003	Grab	R3_CCOWS	samplewater	PumpMobile	Chlorpyrifos	ng/L		122
OLS-POT	4/19/2003	Grab	R3_CCOWS	samplewater	PumpMobile	Chlorpyrifos	ng/L		75
OLS-POT	5/31/2003	Grab	R3_CCOWS	samplewater	PumpMobile	Chlorpyrifos	ng/L		59
OLS-POT	6/9/2003	Grab	R3_CCOWS	samplewater	PumpMobile	Chlorpyrifos	ng/L		59
OLS-POT	7/15/2003	Grab	R3_CCOWS	samplewater	PumpMobile	Chlorpyrifos	ng/L		84
OLS-POT	8/4/2003	Grab	R3_CCOWS	samplewater	PumpMobile	Chlorpyrifos	ng/L		62
OLS-POT	9/19/2003	Grab	R3_CCOWS	samplewater	PumpMobile	Chlorpyrifos	ng/L		107
OLS-POT	10/21/2003	Grab	R3_CCOWS	samplewater	PumpMobile	Chlorpyrifos	ng/L		53
REC-183	7/1/2002	Grab	R3_CCOWS	samplewater	Grab*	Chlorpyrifos	ng/L		60
REC-JON	4/13/2000	Grab	R3_CCOWS	samplewater	PumpMobile	Chlorpyrifos	ng/L		184
REC-JON	7/1/2002	Grab	R3_CCOWS	samplewater	Grab*	Chlorpyrifos	ng/L		45
REC-JON	7/8/2002	Grab	R3_CCOWS	samplewater	PumpMobile	Chlorpyrifos	ng/L		81
REC-JON	8/29/2002	Grab	R3_CCOWS	samplewater	PumpMobile	Chlorpyrifos	ng/L		86
REC-JON	9/13/2002	Grab	R3_CCOWS	samplewater	PumpMobile	Chlorpyrifos	ng/L		62
REC-JON	9/25/2002	Grab	R3_CCOWS	samplewater	PumpMobile	Chlorpyrifos	ng/L		69
REC-JON	10/22/2002	Grab	R3_CCOWS	samplewater	PumpMobile	Chlorpyrifos	ng/L		121
REC-JON	11/6/2002	Grab	R3_CCOWS	samplewater	PumpMobile	Chlorpyrifos	ng/L		101
REC-JON	11/8/2002	Grab	R3_CCOWS	samplewater	PumpMobile	Chlorpyrifos	ng/L		266
REC-JON	11/8/2002	Grab	R3_CCOWS	samplewater	PumpMobile	Chlorpyrifos	ng/L		150
REC-JON	11/11/2002	Grab	R3_CCOWS	samplewater	PumpMobile	Chlorpyrifos	ng/L		148
REC-JON	2/15/2003	Grab	R3_CCOWS	samplewater	PumpMobile	Chlorpyrifos	ng/L		184
REC-JON	2/19/2003	Grab	R3_CCOWS	samplewater	PumpMobile	Chlorpyrifos	ng/L		107
REC-JON	2/20/2003	Grab	R3_CCOWS	samplewater	PumpMobile	Chlorpyrifos	ng/L		212

Station Code	Sample Date	Sample Type Code	ProjectID	Matrix Name	Method Name	Analyte Name	Unit	Basis	Result
REC-JON	3/13/2003	Grab	R3_CCOWS	samplewater	PumpMobile	Chlorpyrifos	ng/L		84
REC-JON	3/15/2003	Grab	R3_CCOWS	samplewater	PumpMobile	Chlorpyrifos	ng/L		283
REC-JON	3/17/2003	Grab	R3_CCOWS	samplewater	Grab*	Chlorpyrifos	ng/L		180
REC-JON	4/19/2003	Grab	R3_CCOWS	samplewater	PumpMobile	Chlorpyrifos	ng/L		65
REC-JON	5/31/2003	Grab	R3_CCOWS	samplewater	PumpMobile	Chlorpyrifos	ng/L		73
REC-JON	6/10/2003	Grab	R3_CCOWS	samplewater	PumpMobile	Chlorpyrifos	ng/L		93
REC-JON	7/14/2003	Grab	R3_CCOWS	samplewater	PumpMobile	Chlorpyrifos	ng/L		100
REC-JON	8/3/2003	Grab	R3_CCOWS	samplewater	PumpMobile	Chlorpyrifos	ng/L		96
REC-JON	9/18/2003	Grab	R3_CCOWS	samplewater	PumpMobile	Chlorpyrifos	ng/L		153
REC-JON	10/21/2003	Grab	R3_CCOWS	samplewater	PumpMobile	Chlorpyrifos	ng/L		71
REC-VIC	7/1/2002	Grab	R3_CCOWS	samplewater	Grab*	Chlorpyrifos	ng/L		47
SAL-DAV	3/13/2002	Grab	R3_CCOWS	samplewater	PumpMobile	Chlorpyrifos	ng/L		59
SAL-DAV	7/8/2002	Grab	R3_CCOWS	samplewater	PumpMobile	Chlorpyrifos	ng/L		139
SAL-DAV	8/29/2002	Grab	R3_CCOWS	samplewater	PumpMobile	Chlorpyrifos	ng/L		48
SAL-DAV	9/13/2002	Grab	R3_CCOWS	samplewater	PumpMobile	Chlorpyrifos	ng/L		76
SAL-DAV	9/25/2002	Grab	R3_CCOWS	samplewater	PumpMobile	Chlorpyrifos	ng/L		54
SAL-DAV	10/22/2002	Grab	R3_CCOWS	samplewater	PumpMobile	Chlorpyrifos	ng/L		55
SAL-DAV	11/7/2002	Grab	R3_CCOWS	samplewater	PumpMobile	Chlorpyrifos	ng/L		76
SAL-DAV	11/8/2002	Grab	R3_CCOWS	samplewater	PumpMobile	Chlorpyrifos	ng/L		175
SAL-DAV	11/11/2002	Grab	R3_CCOWS	samplewater	PumpMobile	Chlorpyrifos	ng/L		186
SAL-DAV	2/15/2003	Grab	R3_CCOWS	samplewater	PumpMobile	Chlorpyrifos	ng/L		96
SAL-DAV	2/19/2003	Grab	R3_CCOWS	samplewater	PumpMobile	Chlorpyrifos	ng/L		63
SAL-DAV	2/20/2003	Grab	R3_CCOWS	samplewater	PumpMobile	Chlorpyrifos	ng/L		112
SAL-DAV	3/13/2003	Grab	R3_CCOWS	samplewater	PumpMobile	Chlorpyrifos	ng/L		59
SAL-DAV	3/15/2003	Grab	R3_CCOWS	samplewater	PumpMobile	Chlorpyrifos	ng/L		222
SAL-DAV	3/17/2003	Grab	R3_CCOWS	samplewater	PumpMobile	Chlorpyrifos	ng/L		119
SAL-DAV	4/19/2003	Grab	R3_CCOWS	samplewater	PumpMobile	Chlorpyrifos	ng/L		63
SAL-DAV	5/30/2003	Grab	R3_CCOWS	samplewater	PumpMobile	Chlorpyrifos	ng/L		0
SAL-DAV	6/9/2003	Grab	R3_CCOWS	samplewater	PumpMobile	Chlorpyrifos	ng/L		51
SAL-DAV	7/14/2003	Grab	R3_CCOWS	samplewater	PumpMobile	Chlorpyrifos	ng/L		61
SAL-DAV	8/4/2003	Grab	R3_CCOWS	samplewater	PumpMobile	Chlorpyrifos	ng/L		88
SAL-DAV	9/18/2003	Grab	R3_CCOWS	samplewater	PumpMobile	Chlorpyrifos	ng/L		66
SAL-DAV	10/21/2003	Grab	R3_CCOWS	samplewater	PumpMobile	Chlorpyrifos	ng/L		0
SAL-MON	7/8/2002	Grab	R3_CCOWS	samplewater	PumpMobile	Chlorpyrifos	ng/L		69

Station Code	Sample Date	Sample Type Code	ProjectID	Matrix Name	Method Name	Analyte Name	Unit	Basis	Result
SAL-MON	8/29/2002	Grab	R3_CCOWS	samplewater	PumpMobile	Chlorpyrifos	ng/L		53
SAL-MON	9/13/2002	Grab	R3_CCOWS	samplewater	PumpMobile	Chlorpyrifos	ng/L		45
SAL-MON	9/25/2002	Grab	R3_CCOWS	samplewater	PumpMobile	Chlorpyrifos	ng/L		53
SAL-MON	10/22/2002	Grab	R3_CCOWS	samplewater	PumpMobile	Chlorpyrifos	ng/L		58
SAL-MON	11/6/2002	Grab	R3_CCOWS	samplewater	PumpMobile	Chlorpyrifos	ng/L		58
SAL-MON	11/11/2002	Grab	R3_CCOWS	samplewater	PumpMobile	Chlorpyrifos	ng/L		85
SAL-MON	2/14/2003	Grab	R3_CCOWS	samplewater	PumpMobile	Chlorpyrifos	ng/L		107
SAL-MON	2/21/2003	Grab	R3_CCOWS	samplewater	PumpMobile	Chlorpyrifos	ng/L		85
SAL-MON	3/12/2003	Grab	R3_CCOWS	samplewater	PumpMobile	Chlorpyrifos	ng/L		85
SAL-MON	3/17/2003	Grab	R3_CCOWS	samplewater	PumpMobile	Chlorpyrifos	ng/L		87
SAL-MON	4/19/2003	Grab	R3_CCOWS	samplewater	PumpMobile	Chlorpyrifos	ng/L		0
SAL-MON	5/30/2003	Grab	R3_CCOWS	samplewater	PumpMobile	Chlorpyrifos	ng/L		68
SAL-MON	6/10/2003	Grab	R3_CCOWS	samplewater	PumpMobile	Chlorpyrifos	ng/L		0
SAL-MON	7/15/2003	Grab	R3_CCOWS	samplewater	PumpMobile	Chlorpyrifos	ng/L		59
SAL-MON	7/15/2003	Grab	R3_CCOWS	samplewater	PumpMobile	Chlorpyrifos	ng/L		61
SAL-MON	8/4/2003	Grab	R3_CCOWS	samplewater	PumpMobile	Chlorpyrifos	ng/L		52
SAL-MON	9/18/2003	Grab	R3_CCOWS	samplewater	PumpMobile	Chlorpyrifos	ng/L		55
SAL-MON	10/21/2003	Grab	R3_CCOWS	samplewater	PumpMobile	Chlorpyrifos	ng/L		45
TEM-HAR	7/1/2002	Grab	R3_CCOWS	samplewater	Grab*	Chlorpyrifos	ng/L		44
TEM-MOL	7/1/2002	Grab	R3_CCOWS	samplewater	Grab*	Chlorpyrifos	ng/L		50
BLA-COO	7/8/2002	Grab	R3_CCOWS	samplewater	PumpMobile	Diazinon	ng/L		68
BLA-COO	8/29/2002	Grab	R3_CCOWS	samplewater	PumpMobile	Diazinon	ng/L		100
BLA-COO	9/13/2002	Grab	R3_CCOWS	samplewater	PumpMobile	Diazinon	ng/L		449
BLA-COO	9/25/2002	Grab	R3_CCOWS	samplewater	PumpMobile	Diazinon	ng/L		202
BLA-COO	10/22/2002	Grab	R3_CCOWS	samplewater	PumpMobile	Diazinon	ng/L		50
BLA-COO	11/6/2002	Grab	R3_CCOWS	samplewater	PumpMobile	Diazinon	ng/L		0
BLA-COO	11/8/2002	Grab	R3_CCOWS	samplewater	PumpMobile	Diazinon	ng/L		386
BLA-COO	11/8/2002	Grab	R3_CCOWS	samplewater	PumpMobile	Diazinon	ng/L		4497
BLA-COO	11/11/2002	Grab	R3_CCOWS	samplewater	PumpMobile	Diazinon	ng/L		58
BLA-COO	2/15/2003	Grab	R3_CCOWS	samplewater	PumpMobile	Diazinon	ng/L		1170
BLA-COO	2/19/2003	Grab	R3_CCOWS	samplewater	PumpMobile	Diazinon	ng/L		53
BLA-COO	2/20/2003	Grab	R3_CCOWS	samplewater	PumpMobile	Diazinon	ng/L		28
BLA-COO	3/12/2003	Grab	R3_CCOWS	samplewater	PumpMobile	Diazinon	ng/L		26
BLA-COO	3/15/2003	Grab	R3_CCOWS	samplewater	PumpMobile	Diazinon	ng/L		3003

Station Code	Sample Date	Sample Type Code	ProjectID	Matrix Name	Method Name	Analyte Name	Unit	Basis	Result
BLA-COO	3/17/2003	Grab	R3_CCOWS	samplewater	PumpMobile	Diazinon	ng/L		36
BLA-COO	4/19/2003	Grab	R3_CCOWS	samplewater	PumpMobile	Diazinon	ng/L		40
BLA-COO	5/30/2003	Grab	R3_CCOWS	samplewater	PumpMobile	Diazinon	ng/L		66
BLA-COO	6/9/2003	Grab	R3_CCOWS	samplewater	PumpMobile	Diazinon	ng/L		164
BLA-COO	7/14/2003	Grab	R3_CCOWS	samplewater	PumpMobile	Diazinon	ng/L		137
BLA-COO	8/3/2003	Grab	R3_CCOWS	samplewater	PumpMobile	Diazinon	ng/L		33
BLA-COO	9/18/2003	Grab	R3_CCOWS	samplewater	PumpMobile	Diazinon	ng/L		130
BLA-COO	10/21/2003	Grab	R3_CCOWS	samplewater	PumpMobile	Diazinon	ng/L		120
BLA-PUM	7/8/2002	Grab	R3_CCOWS	samplewater	PumpMobile	Diazinon	ng/L		121
BLA-PUM	8/29/2002	Grab	R3_CCOWS	samplewater	PumpMobile	Diazinon	ng/L		124
BLA-PUM	9/13/2002	Grab	R3_CCOWS	samplewater	PumpMobile	Diazinon	ng/L		940
BLA-PUM	9/25/2002	Grab	R3_CCOWS	samplewater	PumpMobile	Diazinon	ng/L		334
BLA-PUM	10/22/2002	Grab	R3_CCOWS	samplewater	PumpMobile	Diazinon	ng/L		53
BLA-PUM	11/6/2002	Grab	R3_CCOWS	samplewater	PumpMobile	Diazinon	ng/L		44
BLA-PUM	11/11/2002	Grab	R3_CCOWS	samplewater	PumpMobile	Diazinon	ng/L		205
BLA-PUM	2/15/2003	Grab	R3_CCOWS	samplewater	PumpMobile	Diazinon	ng/L		68
BLA-PUM	2/20/2003	Grab	R3_CCOWS	samplewater	PumpMobile	Diazinon	ng/L		90
BLA-PUM	3/12/2003	Grab	R3_CCOWS	samplewater	PumpMobile	Diazinon	ng/L		55
BLA-PUM	3/17/2003	Grab	R3_CCOWS	samplewater	PumpMobile	Diazinon	ng/L		548
BLA-PUM	4/19/2003	Grab	R3_CCOWS	samplewater	PumpMobile	Diazinon	ng/L		66
BLA-PUM	5/30/2003	Grab	R3_CCOWS	samplewater	PumpMobile	Diazinon	ng/L		52
BLA-PUM	6/9/2003	Grab	R3_CCOWS	samplewater	PumpMobile	Diazinon	ng/L		131
BLA-PUM	7/14/2003	Grab	R3_CCOWS	samplewater	PumpMobile	Diazinon	ng/L		130
BLA-PUM	8/3/2003	Grab	R3_CCOWS	samplewater	PumpMobile	Diazinon	ng/L		31
BLA-PUM	9/18/2003	Grab	R3_CCOWS	samplewater	PumpMobile	Diazinon	ng/L		122
BLA-PUM	10/21/2003	Grab	R3_CCOWS	samplewater	PumpMobile	Diazinon	ng/L		88
EP1-ROG	7/8/2002	Grab	R3_CCOWS	samplewater	PumpMobile	Diazinon	ng/L		26489
EP1-ROG	8/29/2002	Grab	R3_CCOWS	samplewater	PumpMobile	Diazinon	ng/L		3519
EP1-ROG	9/13/2002	Grab	R3_CCOWS	samplewater	PumpMobile	Diazinon	ng/L		12419
EP1-ROG	9/25/2002	Grab	R3_CCOWS	samplewater	PumpMobile	Diazinon	ng/L		26078
EP1-ROG	10/22/2002	Grab	R3_CCOWS	samplewater	PumpMobile	Diazinon	ng/L		15950
EP1-ROG	11/6/2002	Grab	R3_CCOWS	samplewater	PumpMobile	Diazinon	ng/L		3252
EP1-ROG	11/8/2002	Grab	R3_CCOWS	samplewater	PumpMobile	Diazinon	ng/L		2759
EP1-ROG	11/11/2002	Grab	R3_CCOWS	samplewater	PumpMobile	Diazinon	ng/L		5537

Station Code	Sample Date	Sample Type Code	ProjectID	Matrix Name	Method Name	Analyte Name	Unit	Basis	Result
EP1-ROG	2/15/2003	Grab	R3_CCOWS	samplewater	PumpMobile	Diazinon	ng/L		714
EP1-ROG	2/19/2003	Grab	R3_CCOWS	samplewater	PumpMobile	Diazinon	ng/L		1003
EP1-ROG	2/20/2003	Grab	R3_CCOWS	samplewater	PumpMobile	Diazinon	ng/L		2341
EP1-ROG	3/13/2003	Grab	R3_CCOWS	samplewater	PumpMobile	Diazinon	ng/L		900
EP1-ROG	3/15/2003	Grab	R3_CCOWS	samplewater	PumpMobile	Diazinon	ng/L		1660
EP1-ROG	3/17/2003	Grab	R3_CCOWS	samplewater	PumpMobile	Diazinon	ng/L		538
EP1-ROG	4/19/2003	Grab	R3_CCOWS	samplewater	PumpMobile	Diazinon	ng/L		22721
EP1-ROG	5/31/2003	Grab	R3_CCOWS	samplewater	PumpMobile	Diazinon	ng/L		509
EP1-ROG	6/10/2003	Grab	R3_CCOWS	samplewater	PumpMobile	Diazinon	ng/L		302
EP1-ROG	7/14/2003	Grab	R3_CCOWS	samplewater	PumpMobile	Diazinon	ng/L		178
EP1-ROG	8/3/2003	Grab	R3_CCOWS	samplewater	PumpMobile	Diazinon	ng/L		20
EP1-ROG	9/19/2003	Grab	R3_CCOWS	samplewater	PumpMobile	Diazinon	ng/L		579
EP1-ROG	9/19/2003	Grab	R3_CCOWS	samplewater	PumpMobile	Diazinon	ng/L		669
EP1-ROG	10/21/2003	Grab	R3_CCOWS	samplewater	PumpMobile	Diazinon	ng/L		199
EPL-EPL	7/8/2002	Grab	R3_CCOWS	samplewater	PumpMobile	Diazinon	ng/L		103
EPL-EPL	8/29/2002	Grab	R3_CCOWS	samplewater	PumpMobile	Diazinon	ng/L		43
EPL-EPL	9/13/2002	Grab	R3_CCOWS	samplewater	PumpMobile	Diazinon	ng/L		52
EPL-EPL	9/25/2002	Grab	R3_CCOWS	samplewater	PumpMobile	Diazinon	ng/L		81
EPL-EPL	10/23/2002	Grab	R3_CCOWS	samplewater	PumpMobile	Diazinon	ng/L		36
EPL-EPL	11/6/2002	Grab	R3_CCOWS	samplewater	PumpMobile	Diazinon	ng/L		0
EPL-EPL	11/15/2002	Grab	R3_CCOWS	samplewater	PumpMobile	Diazinon	ng/L		24
EPL-EPL	3/13/2003	Grab	R3_CCOWS	samplewater	PumpMobile	Diazinon	ng/L		87
EPL-EPL	3/17/2003	Grab	R3_CCOWS	samplewater	PumpMobile	Diazinon	ng/L		345
EPL-EPL	4/19/2003	Grab	R3_CCOWS	samplewater	PumpMobile	Diazinon	ng/L		101
EPL-EPL	5/31/2003	Grab	R3_CCOWS	samplewater	PumpMobile	Diazinon	ng/L		44
EPL-EPL	6/10/2003	Grab	R3_CCOWS	samplewater	PumpMobile	Diazinon	ng/L		60
EPL-EPL	7/14/2003	Grab	R3_CCOWS	samplewater	PumpMobile	Diazinon	ng/L		53
EPL-EPL	8/3/2003	Grab	R3_CCOWS	samplewater	PumpMobile	Diazinon	ng/L		20
EPL-EPL	9/19/2003	Grab	R3_CCOWS	samplewater	PumpMobile	Diazinon	ng/L		54
EPL-EPL	10/21/2003	Grab	R3_CCOWS	samplewater	PumpMobile	Diazinon	ng/L		174
MOS-SAN	7/9/2002	Grab	R3_CCOWS	samplewater	PumpMobile	Diazinon	ng/L		31
MOS-SAN	8/29/2002	Grab	R3_CCOWS	samplewater	PumpMobile	Diazinon	ng/L		73
MOS-SAN	9/13/2002	Grab	R3_CCOWS	samplewater	PumpMobile	Diazinon	ng/L		0
MOS-SAN	9/25/2002	Grab	R3_CCOWS	samplewater	PumpMobile	Diazinon	ng/L		0

Station Code	Sample Date	Sample Type Code	ProjectID	Matrix Name	Method Name	Analyte Name	Unit	Basis	Result
MOS-SAN	10/22/2002	Grab	R3_CCOWS	samplewater	PumpMobile	Diazinon	ng/L		25
MOS-SAN	11/6/2002	Grab	R3_CCOWS	samplewater	PumpMobile	Diazinon	ng/L		0
MOS-SAN	11/11/2002	Grab	R3_CCOWS	samplewater	PumpMobile	Diazinon	ng/L		32
MOS-SAN	2/14/2003	Grab	R3_CCOWS	samplewater	PumpMobile	Diazinon	ng/L		115
MOS-SAN	2/20/2003	Grab	R3_CCOWS	samplewater	PumpMobile	Diazinon	ng/L		94
MOS-SAN	3/12/2003	Grab	R3_CCOWS	samplewater	PumpMobile	Diazinon	ng/L		682
MOS-SAN	3/17/2003	Grab	R3_CCOWS	samplewater	PumpMobile	Diazinon	ng/L		624
MOS-SAN	4/19/2003	Grab	R3_CCOWS	samplewater	PumpMobile	Diazinon	ng/L		305
MOS-SAN	5/30/2003	Grab	R3_CCOWS	samplewater	PumpMobile	Diazinon	ng/L		77
MOS-SAN	6/9/2003	Grab	R3_CCOWS	samplewater	PumpMobile	Diazinon	ng/L		96
MOS-SAN	7/15/2003	Grab	R3_CCOWS	samplewater	PumpMobile	Diazinon	ng/L		21
MOS-SAN	8/4/2003	Grab	R3_CCOWS	samplewater	PumpMobile	Diazinon	ng/L		46
MOS-SAN	9/19/2003	Grab	R3_CCOWS	samplewater	PumpMobile	Diazinon	ng/L		20
MOS-SAN	10/21/2003	Grab	R3_CCOWS	samplewater	PumpMobile	Diazinon	ng/L		0
OLS-MON	7/1/2002	Grab	R3_CCOWS	samplewater	Grab*	Diazinon	ng/L		301
OLS-POT	7/1/2002	Grab	R3_CCOWS	samplewater	Grab*	Diazinon	ng/L		424
OLS-POT	7/9/2002	Grab	R3_CCOWS	samplewater	PumpMobile	Diazinon	ng/L		74
OLS-POT	8/29/2002	Grab	R3_CCOWS	samplewater	PumpMobile	Diazinon	ng/L		102
OLS-POT	9/13/2002	Grab	R3_CCOWS	samplewater	PumpMobile	Diazinon	ng/L		192
OLS-POT	9/25/2002	Grab	R3_CCOWS	samplewater	PumpMobile	Diazinon	ng/L		104
OLS-POT	10/22/2002	Grab	R3_CCOWS	samplewater	PumpMobile	Diazinon	ng/L		71
OLS-POT	11/6/2002	Grab	R3_CCOWS	samplewater	PumpMobile	Diazinon	ng/L		0
OLS-POT	11/8/2002	Grab	R3_CCOWS	samplewater	PumpMobile	Diazinon	ng/L		360
OLS-POT	11/11/2002	Grab	R3_CCOWS	samplewater	PumpMobile	Diazinon	ng/L		78
OLS-POT	2/14/2003	Grab	R3_CCOWS	samplewater	PumpMobile	Diazinon	ng/L		204
OLS-POT	2/19/2003	Grab	R3_CCOWS	samplewater	PumpMobile	Diazinon	ng/L		61
OLS-POT	2/20/2003	Grab	R3_CCOWS	samplewater	PumpMobile	Diazinon	ng/L		235
OLS-POT	3/12/2003	Grab	R3_CCOWS	samplewater	PumpMobile	Diazinon	ng/L		410
OLS-POT	3/15/2003	Grab	R3_CCOWS	samplewater	PumpMobile	Diazinon	ng/L		489
OLS-POT	3/17/2003	Grab	R3_CCOWS	samplewater	PumpMobile	Diazinon	ng/L		385
OLS-POT	4/19/2003	Grab	R3_CCOWS	samplewater	PumpMobile	Diazinon	ng/L		366
OLS-POT	5/31/2003	Grab	R3_CCOWS	samplewater	PumpMobile	Diazinon	ng/L		261
OLS-POT	6/9/2003	Grab	R3_CCOWS	samplewater	PumpMobile	Diazinon	ng/L		93
OLS-POT	7/15/2003	Grab	R3_CCOWS	samplewater	PumpMobile	Diazinon	ng/L		60

Station Code	Sample Date	Sample Type Code	ProjectID	Matrix Name	Method Name	Analyte Name	Unit	Basis	Result
OLS-POT	8/4/2003	Grab	R3_CCOWS	samplewater	PumpMobile	Diazinon	ng/L		26
OLS-POT	9/19/2003	Grab	R3_CCOWS	samplewater	PumpMobile	Diazinon	ng/L		127
OLS-POT	10/21/2003	Grab	R3_CCOWS	samplewater	PumpMobile	Diazinon	ng/L		80
REC-183	7/1/2002	Grab	R3_CCOWS	samplewater	Grab*	Diazinon	ng/L		479
REC-JON	4/13/2000	Grab	R3_CCOWS	samplewater	PumpMobile	Diazinon	ng/L		390
REC-JON	7/1/2002	Grab	R3_CCOWS	samplewater	Grab*	Diazinon	ng/L		801
REC-JON	7/8/2002	Grab	R3_CCOWS	samplewater	PumpMobile	Diazinon	ng/L		335
REC-JON	8/29/2002	Grab	R3_CCOWS	samplewater	PumpMobile	Diazinon	ng/L		697
REC-JON	9/13/2002	Grab	R3_CCOWS	samplewater	PumpMobile	Diazinon	ng/L		2571
REC-JON	9/25/2002	Grab	R3_CCOWS	samplewater	PumpMobile	Diazinon	ng/L		262
REC-JON	10/22/2002	Grab	R3_CCOWS	samplewater	PumpMobile	Diazinon	ng/L		344
REC-JON	11/6/2002	Grab	R3_CCOWS	samplewater	PumpMobile	Diazinon	ng/L		86
REC-JON	11/8/2002	Grab	R3_CCOWS	samplewater	PumpMobile	Diazinon	ng/L		651
REC-JON	11/8/2002	Grab	R3_CCOWS	samplewater	PumpMobile	Diazinon	ng/L		520
REC-JON	11/11/2002	Grab	R3_CCOWS	samplewater	PumpMobile	Diazinon	ng/L		370
REC-JON	2/15/2003	Grab	R3_CCOWS	samplewater	PumpMobile	Diazinon	ng/L		390
REC-JON	2/19/2003	Grab	R3_CCOWS	samplewater	PumpMobile	Diazinon	ng/L		965
REC-JON	2/20/2003	Grab	R3_CCOWS	samplewater	PumpMobile	Diazinon	ng/L		976
REC-JON	3/13/2003	Grab	R3_CCOWS	samplewater	PumpMobile	Diazinon	ng/L		208
REC-JON	3/15/2003	Grab	R3_CCOWS	samplewater	PumpMobile	Diazinon	ng/L		826
REC-JON	3/17/2003	Grab	R3_CCOWS	samplewater	Grab*	Diazinon	ng/L		376
REC-JON	4/19/2003	Grab	R3_CCOWS	samplewater	PumpMobile	Diazinon	ng/L		954
REC-JON	5/31/2003	Grab	R3_CCOWS	samplewater	PumpMobile	Diazinon	ng/L		160
REC-JON	6/10/2003	Grab	R3_CCOWS	samplewater	PumpMobile	Diazinon	ng/L		395
REC-JON	7/14/2003	Grab	R3_CCOWS	samplewater	PumpMobile	Diazinon	ng/L		374
REC-JON	8/3/2003	Grab	R3_CCOWS	samplewater	PumpMobile	Diazinon	ng/L		334
REC-JON	9/18/2003	Grab	R3_CCOWS	samplewater	PumpMobile	Diazinon	ng/L		298
REC-JON	10/21/2003	Grab	R3_CCOWS	samplewater	PumpMobile	Diazinon	ng/L		291
REC-VIC	7/1/2002	Grab	R3_CCOWS	samplewater	Grab*	Diazinon	ng/L		581
SAL-DAV	3/13/2002	Grab	R3_CCOWS	samplewater	PumpMobile	Diazinon	ng/L		33
SAL-DAV	7/8/2002	Grab	R3_CCOWS	samplewater	PumpMobile	Diazinon	ng/L		36
SAL-DAV	8/29/2002	Grab	R3_CCOWS	samplewater	PumpMobile	Diazinon	ng/L		29
SAL-DAV	9/13/2002	Grab	R3_CCOWS	samplewater	PumpMobile	Diazinon	ng/L		387
SAL-DAV	9/25/2002	Grab	R3_CCOWS	samplewater	PumpMobile	Diazinon	ng/L		86

Station Code	Sample Date	Sample Type Code	ProjectID	Matrix Name	Method Name	Analyte Name	Unit	Basis	Result
SAL-DAV	10/22/2002	Grab	R3_CCOWS	samplewater	PumpMobile	Diazinon	ng/L		22
SAL-DAV	11/7/2002	Grab	R3_CCOWS	samplewater	PumpMobile	Diazinon	ng/L		0
SAL-DAV	11/8/2002	Grab	R3_CCOWS	samplewater	PumpMobile	Diazinon	ng/L		310
SAL-DAV	11/11/2002	Grab	R3_CCOWS	samplewater	PumpMobile	Diazinon	ng/L		357
SAL-DAV	2/15/2003	Grab	R3_CCOWS	samplewater	PumpMobile	Diazinon	ng/L		94
SAL-DAV	2/19/2003	Grab	R3_CCOWS	samplewater	PumpMobile	Diazinon	ng/L		52
SAL-DAV	2/20/2003	Grab	R3_CCOWS	samplewater	PumpMobile	Diazinon	ng/L		101
SAL-DAV	3/13/2003	Grab	R3_CCOWS	samplewater	PumpMobile	Diazinon	ng/L		33
SAL-DAV	3/15/2003	Grab	R3_CCOWS	samplewater	PumpMobile	Diazinon	ng/L		350
SAL-DAV	3/17/2003	Grab	R3_CCOWS	samplewater	PumpMobile	Diazinon	ng/L		342
SAL-DAV	4/19/2003	Grab	R3_CCOWS	samplewater	PumpMobile	Diazinon	ng/L		223
SAL-DAV	5/30/2003	Grab	R3_CCOWS	samplewater	PumpMobile	Diazinon	ng/L		38
SAL-DAV	6/9/2003	Grab	R3_CCOWS	samplewater	PumpMobile	Diazinon	ng/L		30
SAL-DAV	7/14/2003	Grab	R3_CCOWS	samplewater	PumpMobile	Diazinon	ng/L		27
SAL-DAV	8/4/2003	Grab	R3_CCOWS	samplewater	PumpMobile	Diazinon	ng/L		29
SAL-DAV	9/18/2003	Grab	R3_CCOWS	samplewater	PumpMobile	Diazinon	ng/L		36
SAL-DAV	10/21/2003	Grab	R3_CCOWS	samplewater	PumpMobile	Diazinon	ng/L		20
SAL-MON	7/8/2002	Grab	R3_CCOWS	samplewater	PumpMobile	Diazinon	ng/L		89
SAL-MON	8/29/2002	Grab	R3_CCOWS	samplewater	PumpMobile	Diazinon	ng/L		26
SAL-MON	9/13/2002	Grab	R3_CCOWS	samplewater	PumpMobile	Diazinon	ng/L		108
SAL-MON	9/25/2002	Grab	R3_CCOWS	samplewater	PumpMobile	Diazinon	ng/L		203
SAL-MON	10/22/2002	Grab	R3_CCOWS	samplewater	PumpMobile	Diazinon	ng/L		27
SAL-MON	11/6/2002	Grab	R3_CCOWS	samplewater	PumpMobile	Diazinon	ng/L		0
SAL-MON	11/11/2002	Grab	R3_CCOWS	samplewater	PumpMobile	Diazinon	ng/L		0
SAL-MON	2/14/2003	Grab	R3_CCOWS	samplewater	PumpMobile	Diazinon	ng/L		23
SAL-MON	2/21/2003	Grab	R3_CCOWS	samplewater	PumpMobile	Diazinon	ng/L		41
SAL-MON	3/12/2003	Grab	R3_CCOWS	samplewater	PumpMobile	Diazinon	ng/L		24
SAL-MON	3/17/2003	Grab	R3_CCOWS	samplewater	PumpMobile	Diazinon	ng/L		34
SAL-MON	4/19/2003	Grab	R3_CCOWS	samplewater	PumpMobile	Diazinon	ng/L		40
SAL-MON	5/30/2003	Grab	R3_CCOWS	samplewater	PumpMobile	Diazinon	ng/L		40
SAL-MON	6/10/2003	Grab	R3_CCOWS	samplewater	PumpMobile	Diazinon	ng/L		27
SAL-MON	7/15/2003	Grab	R3_CCOWS	samplewater	PumpMobile	Diazinon	ng/L		18
SAL-MON	7/15/2003	Grab	R3_CCOWS	samplewater	PumpMobile	Diazinon	ng/L		25
SAL-MON	8/4/2003	Grab	R3_CCOWS	samplewater	PumpMobile	Diazinon	ng/L		18

Station Code	Sample Date	Sample Type Code	ProjectID	Matrix Name	Method Name	Analyte Name	Unit	Basis	Result
SAL-MON	9/18/2003	Grab	R3_CCOWS	samplewater	PumpMobile	Diazinon	ng/L		24
SAL-MON	10/21/2003	Grab	R3_CCOWS	samplewater	PumpMobile	Diazinon	ng/L		0
TEM-HAR	7/1/2002	Grab	R3_CCOWS	samplewater	Grab*	Diazinon	ng/L		287
TEM-MOL	7/1/2002	Grab	R3_CCOWS	samplewater	Grab*	Diazinon	ng/L		552

ProjectID	Site Tag	Sample Date	Sample Type Code	Matrix Name	Method Name	Analyte Name	Unit	Basis	Result	Result Qual Code
R3_CMPNorth	306MOR	08/23/2006	Grab	samplewater	EPA 625m	Chlorpyrifos	ng/L		-1	ND
R3_CMPNorth	306MOR	09/27/2006	Grab	samplewater	EPA 625m	Chlorpyrifos	ng/L		-1	ND
R3_CMPNorth	309ALG	08/24/2006	Grab	samplewater	EPA 625m	Chlorpyrifos	ng/L		-1	ND
R3_CMPNorth	309ALG	09/27/2006	Grab	samplewater	EPA 625m	Chlorpyrifos	ng/L		-1	ND
R3_CMPNorth	309ALG	09/27/2006	FieldDup	samplewater	EPA 625m	Chlorpyrifos	ng/L		-1	ND
R3_CMPNorth	309ALG	09/27/2006	FieldBlank	blankwater	EPA 625m	Chlorpyrifos	ng/L		-1	ND
R3_CMPNorth	309ASB	08/23/2006	Grab	samplewater	EPA 625m	Chlorpyrifos	ng/L		-1	ND
R3_CMPNorth	309ASB	09/27/2006	Grab	samplewater	EPA 625m	Chlorpyrifos	ng/L		-1	ND
R3_CMPNorth	309BLA	08/23/2006	Grab	samplewater	EPA 625m	Chlorpyrifos	ng/L		-1	ND
R3_CMPNorth	309BLA	09/27/2006	Grab	samplewater	EPA 625m	Chlorpyrifos	ng/L		-1	ND
R3_CMPNorth	309ESP	08/23/2006	Grab	samplewater	EPA 625m	Chlorpyrifos	ng/L		-1	ND
R3_CMPNorth	309ESP	09/27/2006	Grab	samplewater	EPA 625m	Chlorpyrifos	ng/L		-1	ND
R3_CMPNorth	309JON	08/23/2006	Grab	samplewater	EPA 625m	Chlorpyrifos	ng/L		-1	ND
R3_CMPNorth	309JON	09/27/2006	Grab	samplewater	EPA 625m	Chlorpyrifos	ng/L		-1	ND
R3_CMPNorth	309MER	08/23/2006	Grab	samplewater	EPA 625m	Chlorpyrifos	ng/L		-1	ND
R3_CMPNorth	309MER	09/27/2006	Grab	samplewater	EPA 625m	Chlorpyrifos	ng/L		-1	ND
R3_CMPNorth	309NAD	08/23/2006	Grab	samplewater	EPA 625m	Chlorpyrifos	ng/L		155	
R3_CMPNorth	309NAD	08/23/2006	FieldDup	samplewater	EPA 625m	Chlorpyrifos	ng/L		184	
R3_CMPNorth	309NAD	08/23/2006	FieldBlank	blankwater	EPA 625m	Chlorpyrifos	ng/L		-1	ND
R3_CMPNorth	309NAD	09/27/2006	Grab	samplewater	EPA 625m	Chlorpyrifos	ng/L		-1	ND
R3_CMPNorth	309OLD	08/23/2006	Grab	samplewater	EPA 625m	Chlorpyrifos	ng/L		-1	ND
R3_CMPNorth	309OLD	09/27/2006	Grab	samplewater	EPA 625m	Chlorpyrifos	ng/L		-1	ND
R3_CMPNorth	309QUI	08/24/2006	Grab	samplewater	EPA 625m	Chlorpyrifos	ng/L		245	
R3_CMPNorth	309QUI	09/28/2006	Grab	samplewater	EPA 625m	Chlorpyrifos	ng/L		53.7	
R3_CMPNorth	309SAC	08/24/2006	Grab	samplewater	EPA 625m	Chlorpyrifos	ng/L		-1	ND
R3_CMPNorth	309SSP	08/24/2006	Grab	samplewater	EPA 625m	Chlorpyrifos	ng/L		-1	ND
R3_CMPNorth	309SSP	09/28/2006	Grab	samplewater	EPA 625m	Chlorpyrifos	ng/L		-1	ND
R3_CMPNorth	309TEH	08/23/2006	Grab	samplewater	EPA 625m	Chlorpyrifos	ng/L		-1	ND
R3_CMPNorth	309TEH	09/27/2006	Grab	samplewater	EPA 625m	Chlorpyrifos	ng/L		-1	ND
R3_CMPSouth	312BCJ	08/22/2006	Grab	samplewater	EPA 625m	Chlorpyrifos	ng/L		356	
R3_CMPSouth	312BCJ	09/26/2006	Grab	samplewater	EPA 625m	Chlorpyrifos	ng/L		144	
R3_CMPSouth	312GVS	08/22/2006	Grab	samplewater	EPA 625m	Chlorpyrifos	ng/L		127	
R3_CMPSouth	312GVS	09/26/2006	Grab	samplewater	EPA 625m	Chlorpyrifos	ng/L		43.3	
R3_CMPSouth	312MSD	08/22/2006	Grab	samplewater	EPA 625m	Chlorpyrifos	ng/L		421	
R3_CMPSouth	312MSD	09/26/2006	Grab	samplewater	EPA 625m	Chlorpyrifos	ng/L		71.1	

ProjectID	Site Tag	Sample Date	Sample Type Code	Matrix Name	Method Name	Analyte Name	Unit	Basis	Result	Result Qual Code
R3_CMPSouth	312MSD	09/26/2006	FieldDup	samplewater	EPA 625m	Chlorpyrifos	ng/L		63.8	
R3_CMPSouth	312MSD	09/26/2006	FieldBlank	blankwater	EPA 625m	Chlorpyrifos	ng/L		-1	ND
R3_CMPSouth	312OFC	08/23/2006	Grab	samplewater	EPA 625m	Chlorpyrifos	ng/L		183	
R3_CMPSouth	312OFC	08/23/2006	FieldDup	samplewater	EPA 625m	Chlorpyrifos	ng/L		167	
R3_CMPSouth	312OFC	08/23/2006	FieldBlank	blankwater	EPA 625m	Chlorpyrifos	ng/L		-1	ND
R3_CMPSouth	312OFC	09/26/2006	Grab	samplewater	EPA 625m	Chlorpyrifos	ng/L		-1	ND
R3_CMPSouth	312OFN	08/23/2006	Grab	samplewater	EPA 625m	Chlorpyrifos	ng/L		-1	ND
R3_CMPSouth	312OFN	09/26/2006	Grab	samplewater	EPA 625m	Chlorpyrifos	ng/L		-1	ND
R3_CMPSouth	312ORC	08/23/2006	Grab	samplewater	EPA 625m	Chlorpyrifos	ng/L		400	
R3_CMPSouth	312ORC	09/27/2006	Grab	samplewater	EPA 625m	Chlorpyrifos	ng/L		978	
R3_CMPSouth	312ORI	08/22/2006	Grab	samplewater	EPA 625m	Chlorpyrifos	ng/L		110	
R3_CMPSouth	312ORI	09/26/2006	Grab	samplewater	EPA 625m	Chlorpyrifos	ng/L		69.9	
R3_CMPSouth	312SMA	08/23/2006	Grab	samplewater	EPA 625m	Chlorpyrifos	ng/L		187	
R3_CMPSouth	312SMA	09/27/2006	Grab	samplewater	EPA 625m	Chlorpyrifos	ng/L		697	
R3_CMPSouth	312SMI	09/27/2006	Grab	samplewater	EPA 625m	Chlorpyrifos	ng/L		-1	ND
R3_CMPNorth	306MOR	08/23/2006	Grab	samplewater	EPA 625m	Diazinon	ng/L		-2	ND
R3_CMPNorth	306MOR	09/27/2006	Grab	samplewater	EPA 625m	Diazinon	ng/L		-2	ND
R3_CMPNorth	309ALG	08/24/2006	Grab	samplewater	EPA 625m	Diazinon	ng/L		1000	
R3_CMPNorth	309ALG	09/27/2006	Grab	samplewater	EPA 625m	Diazinon	ng/L		159	
R3_CMPNorth	309ALG	09/27/2006	FieldDup	samplewater	EPA 625m	Diazinon	ng/L		163	
R3_CMPNorth	309ALG	09/27/2006	FieldBlank	blankwater	EPA 625m	Diazinon	ng/L		-2	ND
R3_CMPNorth	309ASB	08/23/2006	Grab	samplewater	EPA 625m	Diazinon	ng/L		58.4	
R3_CMPNorth	309ASB	09/27/2006	Grab	samplewater	EPA 625m	Diazinon	ng/L		110	
R3_CMPNorth	309BLA	08/23/2006	Grab	samplewater	EPA 625m	Diazinon	ng/L		71.3	
R3_CMPNorth	309BLA	09/27/2006	Grab	samplewater	EPA 625m	Diazinon	ng/L		166	
R3_CMPNorth	309ESP	08/23/2006	Grab	samplewater	EPA 625m	Diazinon	ng/L		414	
R3_CMPNorth	309ESP	09/27/2006	Grab	samplewater	EPA 625m	Diazinon	ng/L		1590	
R3_CMPNorth	309JON	08/23/2006	Grab	samplewater	EPA 625m	Diazinon	ng/L		3160	
R3_CMPNorth	309JON	09/27/2006	Grab	samplewater	EPA 625m	Diazinon	ng/L		236	
R3_CMPNorth	309MER	08/23/2006	Grab	samplewater	EPA 625m	Diazinon	ng/L		133	
R3_CMPNorth	309MER	09/27/2006	Grab	samplewater	EPA 625m	Diazinon	ng/L		31	
R3_CMPNorth	309NAD	08/23/2006	Grab	samplewater	EPA 625m	Diazinon	ng/L		3550	
R3_CMPNorth	309NAD	08/23/2006	FieldDup	samplewater	EPA 625m	Diazinon	ng/L		3900	
R3_CMPNorth	309NAD	08/23/2006	FieldBlank	blankwater	EPA 625m	Diazinon	ng/L		-2	ND
R3_CMPNorth	309NAD	09/27/2006	Grab	samplewater	EPA 625m	Diazinon	ng/L		128	

ProjectID	Site Tag	Sample Date	Sample Type Code	Matrix Name	Method Name	Analyte Name	Unit	Basis	Result	Result Qual Code
R3_CMPNorth	309OLD	08/23/2006	Grab	samplewater	EPA 625m	Diazinon	ng/L		-2	ND
R3_CMPNorth	309OLD	09/27/2006	Grab	samplewater	EPA 625m	Diazinon	ng/L		206	
R3_CMPNorth	309QUI	08/24/2006	Grab	samplewater	EPA 625m	Diazinon	ng/L		163	
R3_CMPNorth	309QUI	09/28/2006	Grab	samplewater	EPA 625m	Diazinon	ng/L		296	
R3_CMPNorth	309SAC	08/24/2006	Grab	samplewater	EPA 625m	Diazinon	ng/L		-2	ND
R3_CMPNorth	309SSP	08/24/2006	Grab	samplewater	EPA 625m	Diazinon	ng/L		27	
R3_CMPNorth	309SSP	09/28/2006	Grab	samplewater	EPA 625m	Diazinon	ng/L		-2	ND
R3_CMPNorth	309TEH	08/23/2006	Grab	samplewater	EPA 625m	Diazinon	ng/L		248	
R3_CMPNorth	309TEH	09/27/2006	Grab	samplewater	EPA 625m	Diazinon	ng/L		118	
R3_CMPSouth	312BCJ	08/22/2006	Grab	samplewater	EPA 625m	Diazinon	ng/L		-2	ND
R3_CMPSouth	312BCJ	09/26/2006	Grab	samplewater	EPA 625m	Diazinon	ng/L		-2	ND
R3_CMPSouth	312GVS	08/22/2006	Grab	samplewater	EPA 625m	Diazinon	ng/L		-2	ND
R3_CMPSouth	312GVS	09/26/2006	Grab	samplewater	EPA 625m	Diazinon	ng/L		-2	ND
R3_CMPSouth	312MSD	08/22/2006	Grab	samplewater	EPA 625m	Diazinon	ng/L		-2	ND
R3_CMPSouth	312MSD	09/26/2006	Grab	samplewater	EPA 625m	Diazinon	ng/L		-2	ND
R3_CMPSouth	312MSD	09/26/2006	FieldDup	samplewater	EPA 625m	Diazinon	ng/L		-2	ND
R3_CMPSouth	312MSD	09/26/2006	FieldBlank	blankwater	EPA 625m	Diazinon	ng/L		-2	ND
R3_CMPSouth	312OFC	08/23/2006	Grab	samplewater	EPA 625m	Diazinon	ng/L		-2	ND
R3_CMPSouth	312OFC	08/23/2006	FieldDup	samplewater	EPA 625m	Diazinon	ng/L		-2	ND
R3_CMPSouth	312OFC	08/23/2006	FieldBlank	blankwater	EPA 625m	Diazinon	ng/L		-2	ND
R3_CMPSouth	312OFC	09/26/2006	Grab	samplewater	EPA 625m	Diazinon	ng/L		-2	ND
R3_CMPSouth	312OFN	08/23/2006	Grab	samplewater	EPA 625m	Diazinon	ng/L		-2	ND
R3_CMPSouth	312OFN	09/26/2006	Grab	samplewater	EPA 625m	Diazinon	ng/L		-2	ND
R3_CMPSouth	312ORC	08/23/2006	Grab	samplewater	EPA 625m	Diazinon	ng/L		304	
R3_CMPSouth	312ORC	09/27/2006	Grab	samplewater	EPA 625m	Diazinon	ng/L		53.3	
R3_CMPSouth	312ORI	08/22/2006	Grab	samplewater	EPA 625m	Diazinon	ng/L		46.3	
R3_CMPSouth	312ORI	09/26/2006	Grab	samplewater	EPA 625m	Diazinon	ng/L		-2	ND
R3_CMPSouth	312SMA	08/23/2006	Grab	samplewater	EPA 625m	Diazinon	ng/L		414	
R3_CMPSouth	312SMA	09/27/2006	Grab	samplewater	EPA 625m	Diazinon	ng/L		74.3	
R3_CMPSouth	312SMI	09/27/2006	Grab	samplewater	EPA 625m	Diazinon	ng/L		-2	ND

StationCode	EventType	SampleDate	MatrixName	AnalyteName	Unit	Basis	Result	MDL	RL
309DAV001	SedTox_Chem	29-Mar-04	interstitialwater	Chlorpyrifos	µg/L	ww	0.238	0.05	0.05
309OLD001	SedTox_Chem	29-Mar-04	interstitialwater	Chlorpyrifos	µg/L	ww	0.122	0.05	0.05
309TDW001	SedTox_Chem	29-Mar-04	interstitialwater	Chlorpyrifos	µg/L	ww	0.156	0.05	0.05
309DAV001	SedTox_Chem	29-Mar-04	interstitialwater	Diazinon	µg/L	ww	0.052	0.03	0.03
309OLD001	SedTox_Chem	29-Mar-04	interstitialwater	Diazinon	µg/L	ww	0.123	0.03	0.03
309TDW001	SedTox_Chem	29-Mar-04	interstitialwater	Diazinon	µg/L	ww	0.129	0.03	0.03